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27th Annual Report

Colorado River Storage Project and Participating Projects in Fiscal Year 1983

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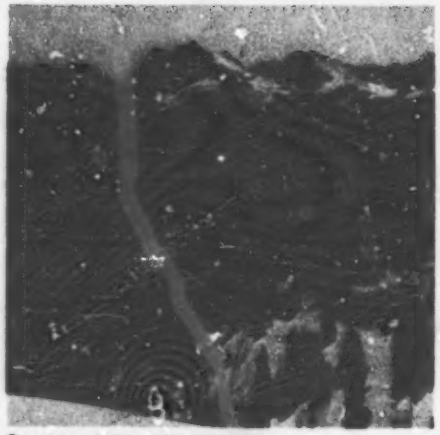
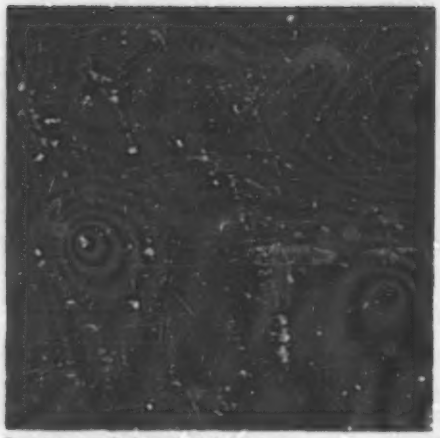
27th Annual Report

Colorado River Storage Project and Participating Projects in Fiscal Year 1983

Heavy snows hit the Mountain West.



Snows accumulate in the mountains.



Snowcape overlook parched desert scene.

The Colorado River Storage Project (CRSP) is a basinwide program of development and use of water resources of the Upper Colorado River, and is one of the most complex and extensive river resources developments in the world.

It takes in the drainage area of the Upper Colorado River Basin, encompassing parts of Wyoming, Utah, Colorado, Arizona, and New Mexico — about one-twelfth of the continental area of the United States. CRSP storage units (Glen Canyon Dam, Flaming Gorge Dam, Navajo Dam, and the Wayne N. Aspinall Unit dams) equalize the erratic flows of the Colorado River and its main tributaries so that water delivery commitments to the Lower Basin States — California, Arizona, and Nevada — can be met even in years of low flow.

The remaining water in the Upper Basin can then serve the needs of farmers, municipalities, and industries. Delivery of this water to consumers is accomplished through the participating projects.

(Cover photo)
A drop of water . . . to help the desert bloom.

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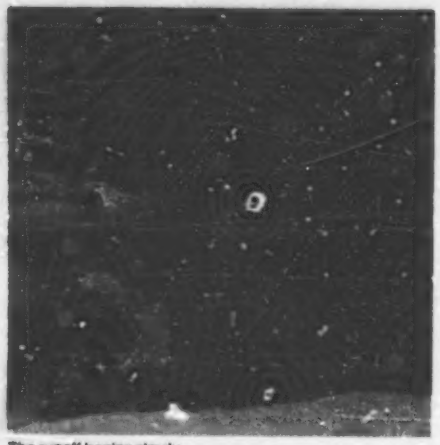
Fiscal Year 1983 Highlights

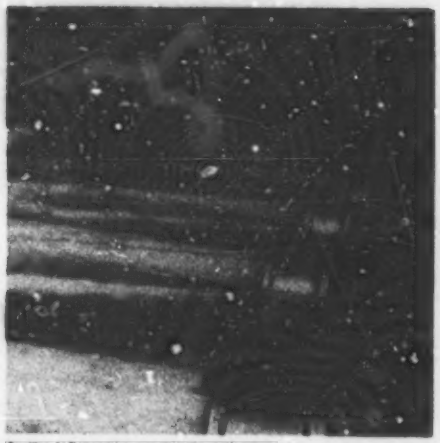


The runoff begins slowly.

Unusually late, heavy spring snows and cooler than usual weather during May, followed by a sudden hot spell in late May and early June substantially increased runoff throughout the West. However, the Upper Colorado Region successfully handled the record runoff.

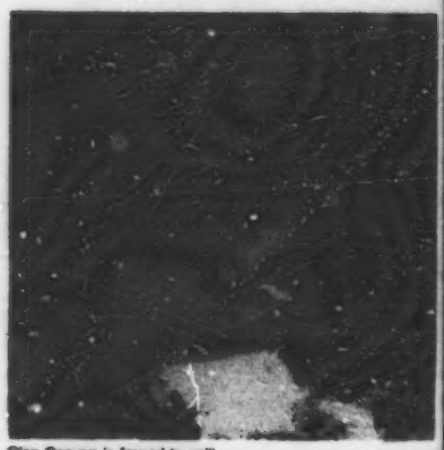
Bids were opened in mid-September 1983 for the construction contract on Upper Stillwater Dam, located about 40 miles northwest of Duchesne, Utah. The dam, expected to cost between $50 million and $100 million, has achieved worldwide attention since it is to be built by a state-of-the-art process using roller-compacted concrete.

Nearly 25,000 acres of federally-owned land was transferred in July 1983 to the States of Utah and Colorado in one of the largest land transfers of its kind.



As the inflows rise, so do the releases.

Vat Tunnel, the longest ever constructed in Utah, was 99 percent complete by August 1983, making it the longest tunnel thus far completed on the Strawberry Collection System of the Central Utah Project.



Glen Canyon is forced to spill.

An agreement was signed between Reclamation and BLM in March 1983 for BLM to prepare information for NEPA compliance on Aquatrain's pipeline corridor. Aquatrain is a $2 billion joint venture between Reclamation and Aquatrain, Inc., to transport coal and other products from the upper reaches of the Colorado River Basin 1,200 miles to the California coast.

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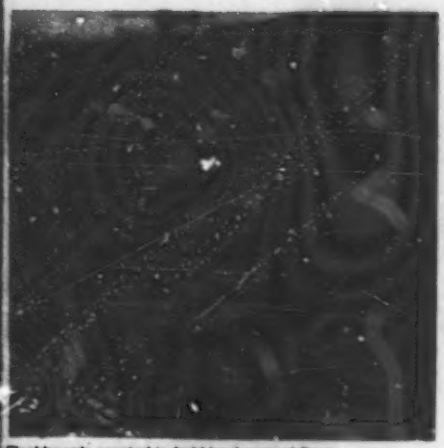
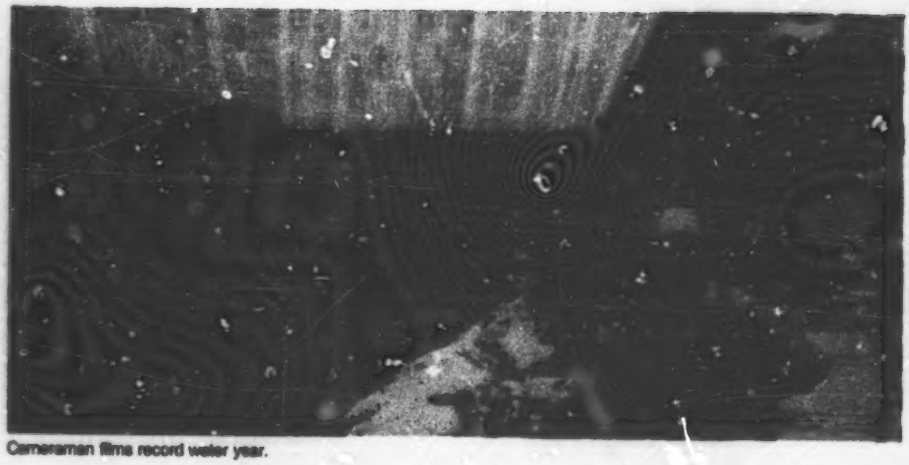
Congressional Appropriations
Fiscal Year 1983



Flashboards erected to hold back record flows.



Cameraman films record water year.

	Fiscal Year 1983	Total to Date
Appropriation for Construction		
Basin Fund	$156,920,000	$1,637,268,177
Recreational Fish and Wildlife	21,455,946	127,814,369
Subtotal	178,375,946	1,765,082,546
Transfers between Government Agencies		381,357
Appropriations to Original Paonia Project		2,081,773
Navajo Indian Irrigation Project	3,000,000	230,897,500
Total Congressional Appropriations	181,375,946	1,998,443,176

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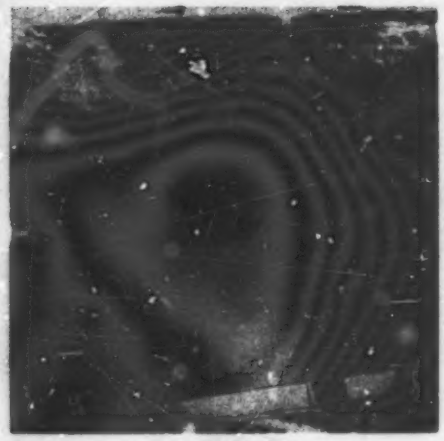
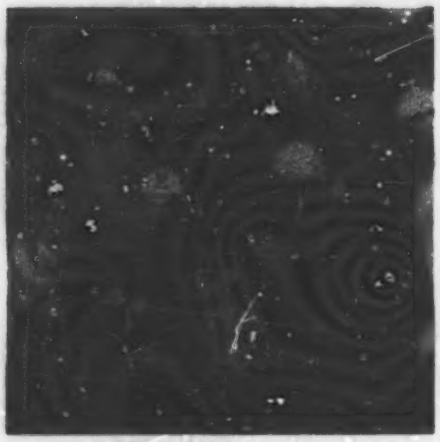
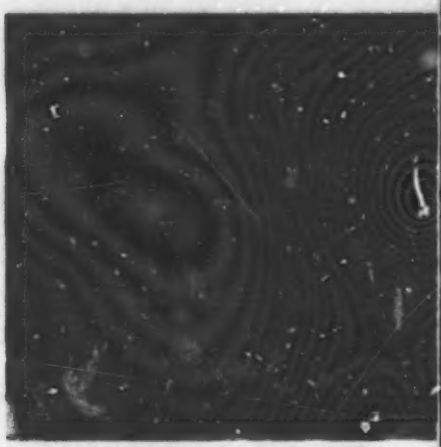
Construction



Artist's conception Upper Stillwater Dam.



Holing through Stillwater Tunnel.



How times have changed — Gunnison Tunnel 1905.

The major construction activities of the Upper Colorado Regional Office in fiscal year 1983 are on the Bonneville Unit, Central Utah Project, Dolores Project, Dallas Creek Project, and Colorado River Basin Salinity Control Project. Construction or rehabilitation was also in progress on the Jensen Unit and Vernal Unit of the Central Utah Project; Glen Canyon Storage Unit; Flaming Gorge Storage Unit, Wayne N. Aspinall Storage Unit of the Colorado River Storage Project; Seedskadee Project, and Lyman Project.

Central Utah Project: Bonneville Unit — Work on the following features was completed in fiscal year 1983: Jordan Aqueduct flow control structures & Reach 3 completion; Pioneer Canal, Duchesne River Canal rehabilitation; Rock Creek Road repair and paving; and chip and seal, Soldier Creek East Side access road.

Work continued on the following in 1983: Vat Tunnel; Vat Diversion Dam and West Fork pipeline; Utah Projects Complex; sand and aggregate production for Upper Stillwater Dam, Stillwater Tunnel and appurtenant structures; Hades and Rhodes Tunnel and appurtenant structures; Upper Stillwater Dam foundation excavation; Strawberry Tunnel inlet rehabilitation; and completion of Stillwater Tunnel.

Contracts were awarded for the following work: Left abutment drainage and toe drainage extension, Soldier Creek Dam; exploratory drilling Fifth Water discharge & access tunnels; Duchesne Office Complex; Soldier Creek Campground facilities, Strawberry Reservoir Recreation Area; Duchesne Government Community, Annex B; aggregate production, Current Creek Road; Haws Point access road and day use areas; West Side Road & day use areas, West Side Road repair and Soldier Creek Dam fisherman access; Strawberry Bay Campground facilities, Strawberry Reservoir Recreation Unit; and Sheep Creek-Rays Valley Road.

Jensen Unit: Work continued on the Tyzack Pumping Plant and Aqueduct. By the end of fiscal year 1983, about 96 percent of the work was complete.

Vernal Unit: The contract for modifications to the Vernal pilot drain was completed in March 1983.

Dolores Project: Work continued on McPhee Dam, the major feature of the Dolores Project. Construction progress is still ahead of schedule.

The contractor for McPhee Dam and the Great Cut Dike continued work on the cut-off trench, grouting, excavation, embankment, selective level outlet works, river outlet works, spillways, and stilling basins. They completed about 95 percent of the work by the end of the fiscal year. A contract was awarded in June 1983 in the amount of $5,858,326.13 for the Great Cut Pumping Plant. Notice to Proceed was given in September 1983. A contract for McPhee Reservoir clearing was awarded in April 1983. Work started that month with about 42 percent completed by the end of September 1983.

The contract work on the Dolores Tunnel and Canal continues. By the end of fiscal year 1983, about 78 percent of the work was completed. A contract was awarded in June 1983 for House Creek Boat Ramp. No work was done in fiscal year 1983. In April 1983, a contract for $125,900 was awarded for the Dolores District Headquarters addition. By the end of fiscal year 1983, about 37 percent of the work was completed. Work continued on Glade Road with about 47 percent completed at the end of the fiscal year.

Dallas Creek Project: Work continued on Ridgway Dam, Stage 2 of the Dallas Creek

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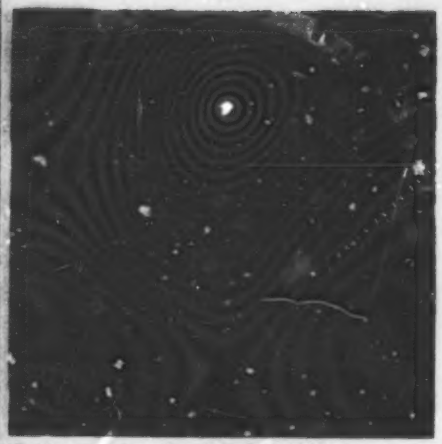
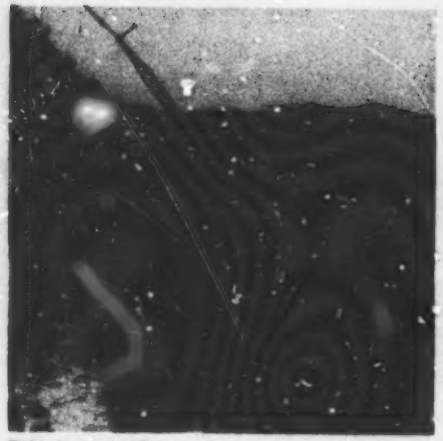
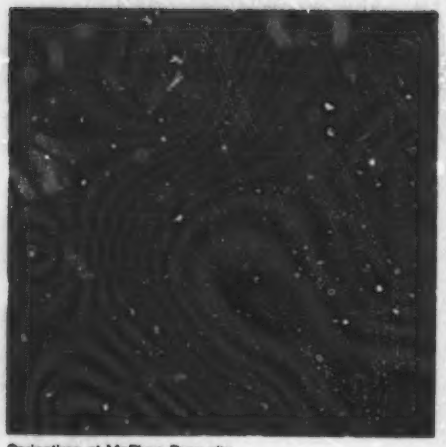


Vibrating concrete — Strawberry Tunnel Inlet.



Right abutment of Ridgway Dam.



Springtime at McPhee Dam site.

Project. Work was done on the dam foundation, access and drainage tunnel, and the spillway and river outlet works. By the end of the fiscal year, about 34 percent of the work was completed.

Colorado River Salinity Control Program: Paradox Valley Unit — The contract for additional wells and brine pipeline extension was completed during the fiscal year.

Colorado River Basin Salinity Control Project: Grand Valley Unit — The contract to place laterals in the Stage 1 area was completed during fiscal year 1983. The contract for the moss and debris removal structure was completed in May 1983. The metal storage building contract was completed in January 1983. A new contract for exploratory drilling, Grand Valley, Stage 2 was awarded August 22, 1983. Work under the contract continues.

Colorado River Storage Project: Glen Canyon Storage Unit — A $7 million letter contract was awarded to Guy F. Atkinson this summer to repair the damage done to the Glen Canyon Dam Spillways. When sufficient information has been received to write a definitive specification, a contract will be negotiated

Construction Costs — Annual and Accumulated

	Annual	Accumulated
Fiscal year 1974	$ 36,986,459	
To date as of June 30, 1974		$1,011,808,392
Fiscal year 1975	52,303,718	
To date as of June 30, 1975		1,064,112,110
Fiscal year 1976	70,281,741	
To date as of June 30, 1976		1,134,393,851
Transitional quarter and fiscal year 1977	131,750,705	
To date as of September 30, 1977		1,266,144,556
Fiscal year 1978	89,001,375	
To date as of September 30, 1978		1,355,145,931
Fiscal year 1979	95,067,380	
To date as of September 30, 1979		1,450,213,311
Fiscal year 1980	130,357,851	
To date as of September 30, 1980		1,580,571,162
Fiscal year 1981	166,678,707	
To date as of September 30, 1981		1,747,249,869
Fiscal year 1982	170,316,665	
To date as of September 30, 1982		1,917,566,534
Fiscal year 1983	200,673,141	
To date as of September 30, 1983		2,118,239,675

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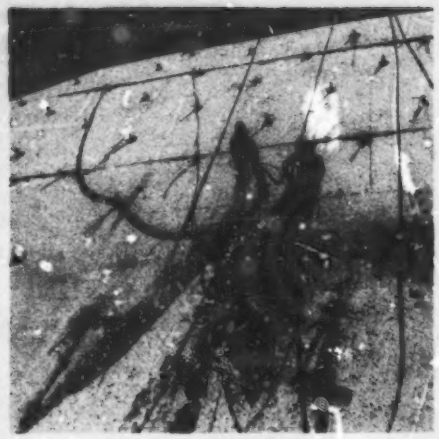
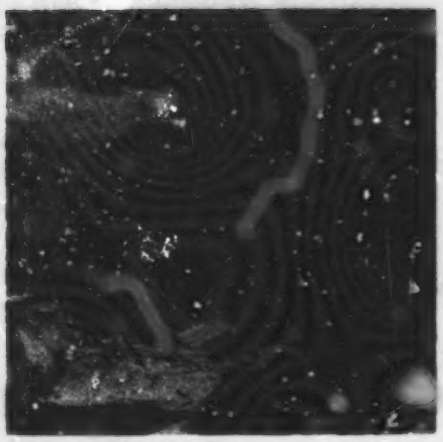


Checking rockbolt slabs at Ridgway Dam.



Excavation at Soldier Creek Dam.

Steel pipe placement on West Fork Pipeline.

to complete the work and cost estimate established for all the work that the contractor will accomplish. To the end of September 1983, total estimated earnings were $3,232,533.78. The work on a contract to repair the powerplant roof was completed this fiscal year. A contract for the turbine draft tube gate painting of the Glen Canyon Powerplant was awarded and completed during the fiscal year.

Flaming Gorge Storage Unit: A contract was awarded for reroofing the Flaming Gorge Powerplant in September 1983. Work was accepted as substantially completed on the spillway tunnel repair on Flaming Gorge Dam in fiscal year 1983. Another contract was planned to complete additional work during the summer. Above average runoff necessitated the use of the spillway and delayed the repair until a later date.

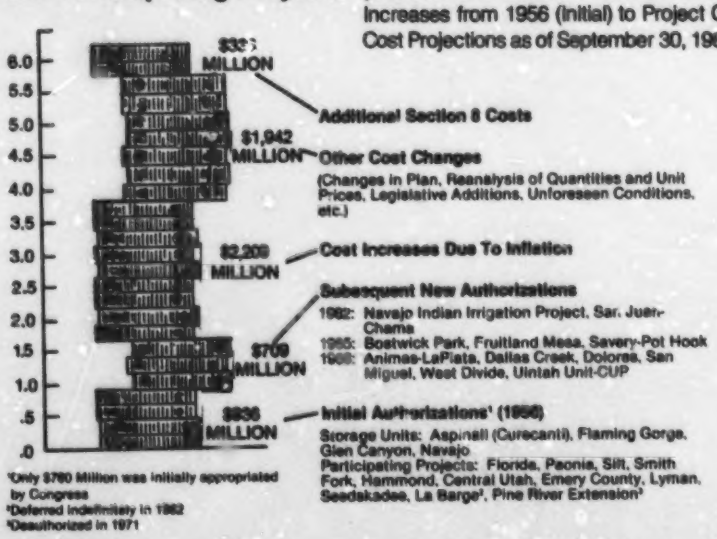
Wayne N. Aspinall Storage Unit: Contracts for cleaning and painting of existing structures and construction of kokanee fish trap, Blue Mesa Dam were completed in fiscal year 1983. New contracts were awarded near the end of fiscal year 1983 for roof repairs at Blue Mesa and Morrow Point Dams and bituminous overlay and seal coat on Blue Mesa and Morrow Point Dams.

Seedskadee Project: A contract was awarded to build a road on the upstream face of Fontenelle Dam. This road will facilitate cone pentrometer testing in the expanded program of investigations of the dam.

Lyman Project: A contract to repair the outlet works stilling basin at Meeks Cabin Dam was awarded and the work complete in fiscal year 1983.

Estimated Construction Costs of Colorado River Storage Project and Participating Projects

(Section 5 and Section 8 Facilities with Projected Increases from 1956 (Initial) to Project Completion. Cost Projections as of September 30, 1983.)



[1]Only $760 Million was initially appropriated by Congress
[2]Deferred indefinitely in 1962
[3]Deauthorized in 1971

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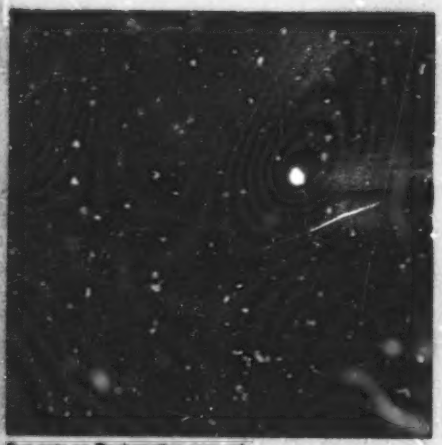
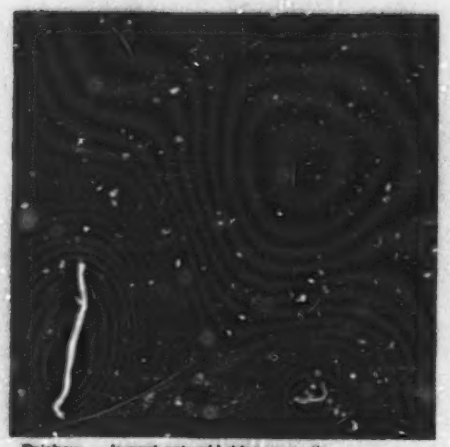
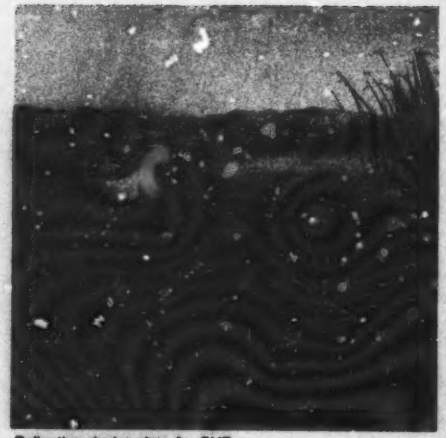
Environmental



Sun sets on Reclamation reservoir.



Rainbow — largest natural bridge on earth.



Collecting design data for CUP.

NEPA compliance in fiscal year 1983 included the filing of the Draft Environmental Statement of the Diamond Fork Power System, preparation of four Environmental Assessments, five Findings of No Significant Impact, and 114 Categorical Exclusions.

Reclamation, in cooperation with the Fish and Wildlife Service, continued a 3-year monitoring effort of the endangered fishes that will address questions relating to the operation of Flaming Gorge Dam and the importance of Lake Powell to the endangered fish. This monitoring effort will cost approximately $550,000 with $190,000 expended in 1983. A final report will be prepared in fiscal year 1985.

The report on the final segment of the "Fisheries Investigations of the Flaming Gorge Tailwater" was completed in August 1983. The final summary report will be completed in fiscal year 1984.

Recognizing the importance of the tailwater trout fisheries below Fontenelle, Crystal, Navajo, and Glen Canyon Dams, Reclamation has initiated a 2-year $470,000 study of these fisheries. The purpose of this study is to determine flow requirements and other habitat needs of the fishes. This will allow Reclamation to better operate and maintain these facilities in compatibility with this valuable resource.

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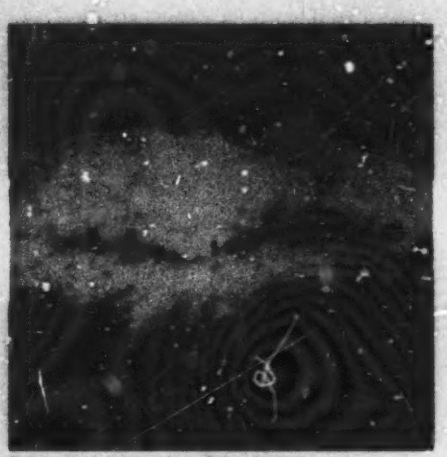
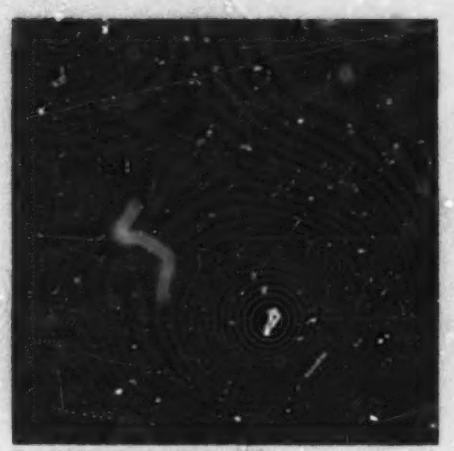
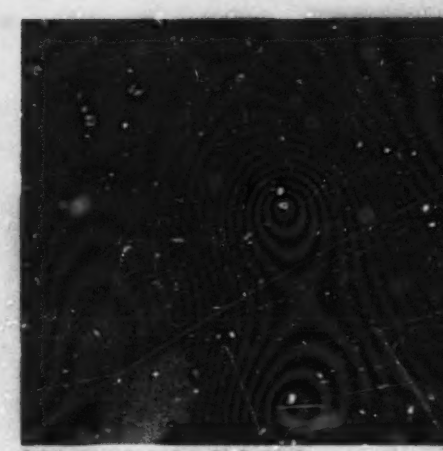
Salinity Control



Salinity crystals taken from Colorado area.



Grand Valley laterals mitigate salinity.



Salinity leaves its mark on this farmland.

Progress is continuing on three of the four authorized units under the Salinity Control Project (Paradox, Grand Valley, Las Vegas Wash). The accomplishments in fiscal year 1983 are as follows:

Paradox Valley Unit: Two independent consultants who reviewed the construction specifications for the deep injection well advised against proceeding at the proposed well location because of anticipated problems drilling through unstable salt formations. Based on their recommendations, alternative sites are being considered. When a new site is selected, the well will be redesigned and drilling will proceed. The schedule changes will delay the contract award by about 14 months to March 1985.

Grand Valley Unit: Except for clean-up items, construction is complete on Stage One of the Grand Valley Unit. The Government Highline Canal, Government Highline laterals and the moss and debris removal structure have all been completed. Monitoring is continuing to verify salinity reductions.

Data collection for the Stage Two area is continuing. Design data collection is under way on the West End Government Highline Canal and its laterals, and the Independent Ranchmen's laterals. These are the first areas that will be constructed under Stage Two. Initiation of construction is expected in early 1986.

The Draft Supplement to the Grand Valley Unit Definite Plan Report, Stage Two Development has been completed.

The recommended plan includes concrete lining all laterals and concrete lining the West End, Middle Portion, and East End of the Government Highline Canal. Concrete lining of the middle and east portions of the Government Highline Canal would be deferred until needed to meet salinity goals.

Las Vegas Wash Unit

After the Definite Plan Report was drafted in 1977, changing ground water conditions delayed construction pending further investigations.

A reevaluation of the original evaporation pond/desalting plan has resulted in consideration of new concepts for salinity control. An October 1982 status report recommended proceeding with a verification program to convey low salinity industrial cooling water past an area of highly saline soil, preventing groundwater infiltration and salt pickup.

A continuing ground-water monitoring program in the Lower Las Vegas Valley has been augmented by the addition of about 50 new observation wells. These wells are being used to verify expected changes in ground-water levels and quality before and after the abandonment of unlined wastewater ditches in the area. The curtailment of seepage from the unlined ditches is expected to cause a rapid drop in ground-water levels, resulting in reduced saline ground-water inflow to Las Vegas Wash.

Crystal Geyser Unit

The Crystal Geyser Unit has been deferred indefinitely because of low cost-effectiveness.

The 10 units authorized for planning under the Water Quality Improvement Program are at various stages within the planning process as follows:

Big Sandy River Unit

A Joint State/Reclamation Report was sent to the State of Wyoming in December 1982 and was presented to the State Legislature. A meeting was held with the Bureau of Land Management, the National Park Service, and Wyoming State archeologists to determine locations where project pipelines could cross historic trails with the least damage.

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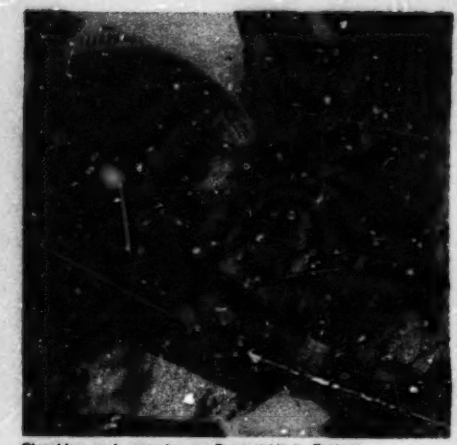
Testing soil density on Dallas Creek Project.



Checking rock samples on Central Utah Project.

A Plan Formulation Working Document was completed, which shows a feasible project, i.e., delivery of saline water for use at the Chevron Chemical Plant near Rock Springs. However, a decision on Reclamation's plan will not be made until Wyoming completes an independent review of current State, Soil Conservation Service, and Reclamation studies, which is expected by January 1984.

Glenwood-Dotsero Springs Unit

The proposed plan has been selected consisting of collecting brine from the Glenwood and Dotsero Springs and transporting the brine through a pipeline for disposal in evaporation ponds located near the Colorado-Utah border. Because of legal and other problems encountered the report has been delayed 2 years until June 1986.

Price-San Rafael Rivers Unit

The contractor completed a draft of the verification activities report identifying salt loading mechanisms and preliminary water and salt budgets. The final alternative plans report was completed in October.

The winter stock watering option will probably be the recommended plan. This plan involves lining stock watering ponds and eliminating flow of water in the canals during the wintertime. The next most attractive plans were the use of saline water in binary cooling towers and use in the production of tar sands. Neither alternative plan is acceptable at this time due to unproven technology and uncertain industrial water demand.

Dirty Devil River Unit

In July, the first public involvement newsletter was distributed. The Plan of Study and Preliminary Findings Report (PFR) were completed and have been approved. The PFR showed the investigation was viable and that studies should continue. Geologic studies and field investigations of potential evaporation pond sites are underway; hydrologic data collection is continuing. The planning report is scheduled for February 1987.

Meeker Dome Unit

The Scott, James, and Marland abandoned test wells were cleaned and plugged. In October 1981, the contractor began a 1-year monitoring program to test results and Reclamation has now been monitoring the plugged wells over a year and the results are still favorable. The monitoring has indicated that the water levels in the observation wells have stabilized. A Preliminary Findings Report on results of the studies to date was completed.

LaVerkin Springs Unit

Because of renewed State and local interest, Reclamation reinitiated salinity studies in fiscal year 1983 to evaluate a new concept for diverting the saline springs to clay-lined evaporation ponds.

Detailed studies are continuing to specifically address downstream Virgin River effects on salt removal estimates and to revise the costs of evaporative ponds for selected liner materials.

Lower Virgin River Unit

This is an investigation of a potential salinity control and water supply project that would encompass the Lower Virgin River Basin, extending from 14 miles above Littlefield Springs in Arizona to the high waters of Lake Mead, Nevada. Large amounts of salts from saline springs and agricultural waste water enter the Lower Virgin River. The investigation has been inactive since the concluding report was finished.

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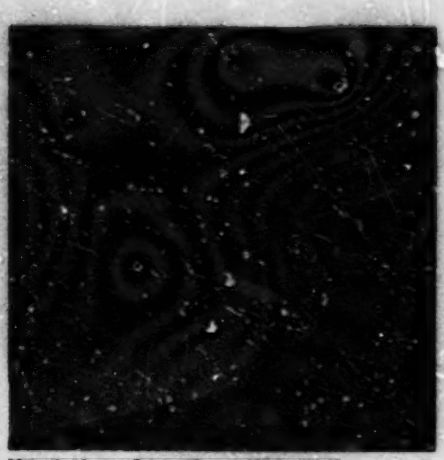
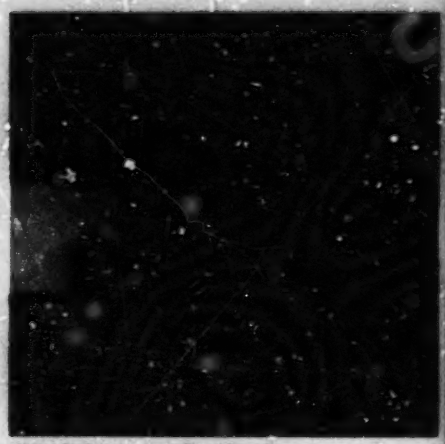
Operations



Majestic Morrow Point spilling at 468 feet high.

Flaming Gorge spilled in 1983.



Water discharging from Blue Mesa Dam.

Reservoirs

During the water year which ended September 30, 1983, the Upper Colorado River Basin yielded 20,580,000 acre-feet, or 193 percent of the long-time average.

The disposition of this runoff was as follows:

	Acre-feet
Net reservoir storage increase	1,878,000
Evaporation loss	766,000
Bank storage increase	496,000
Release to lower basin	17,435,000
Total yield	20,575,000

Water storage at Glen Canyon increased 1,812,000 acre-feet from October 1982 to September 1983. Flaming Gorge storage increased by 104,000 acre-feet and Navajo and Blue Mesa storages increased 112,000 and 1,000 acre-feet, respectively. Fontenelle Reservoir in Wyoming decreased by 148,000. Morrow Point, Crystal, and Taylor Park Reservoirs together had a decrease of 3,000 acre-feet.

Rivers

Due to high reservoir content and record high runoff, releases from the reservoirs were much higher than the minimum required for fish, recreation, or any other demands. The releases from Flaming Gorge were rarely below 2,500 cubic feet per second and were as high as 12,000 cubic feet per second for 2 days. The minimum release from Crystal Reservoir was 1,260 cubic feet per second. The maximum release was 10,000 cubic feet per second. The maximum release from Navajo Reservoir to San Juan River was 2,810 cubic feet per second. The maximum outflow from Lake Powell was 93,000 cubic feet per second on June 22, 1983.

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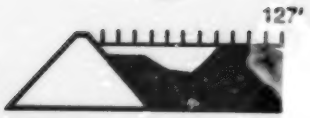
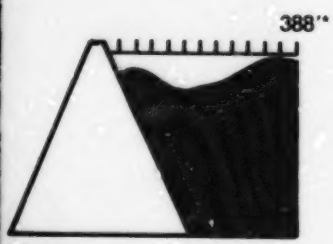
OCTOBER 1982 — SEPTEMBER 1983

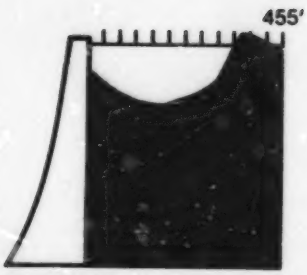
*Maximum height of water above streambed
**Acre-feet



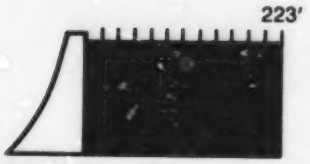
Fontenelle
Max. Capacity — 345,000 AF
Storage on September 30, 1983 — 178,000 AF



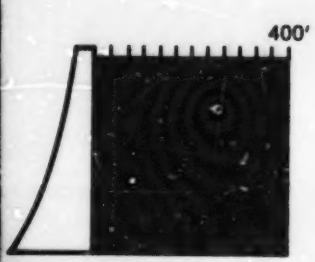
Navajo
Max. Capacity — 1,709,000 AF**
Storage on September 30, 1983 — 1,631,000 AF



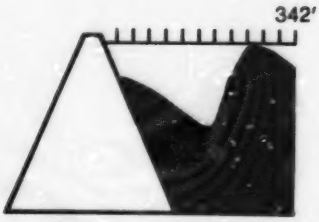
Flaming Gorge
Max. Capacity — 3,789,000 AF
Storage on September 30, 1983 — 3,716,000 AF



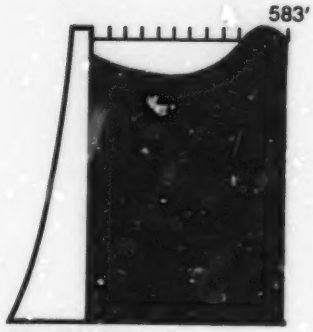
Crystal
Max. Capacity — 26,000 AF
Storage on September 30, 1983 — 19,400 AF



Morrow Point
Max. Capacity — 117,000 AF
Storage on September 30, 1983 — 115,000 AF



Blue Mesa
Max. Capacity — 941,000 AF
Storage on September 30, 1983 — 851,000 AF



Glen Canyon
Max. Capacity — 27,000,000 AF
Storage on September 30, 1983 — 26,815,000 AF

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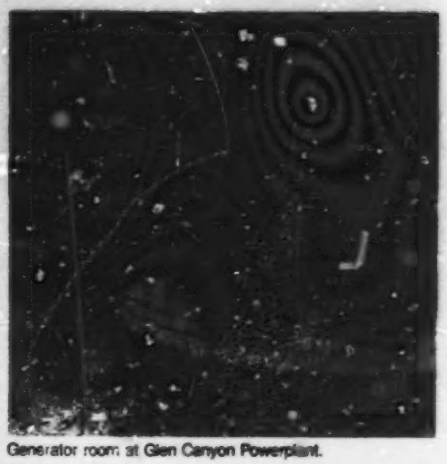
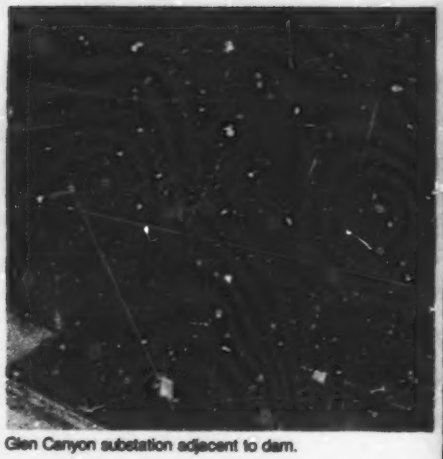
Power Sales



Generator room at Glen Canyon Powerplant.

Fontenelle Powerplant has one generator.



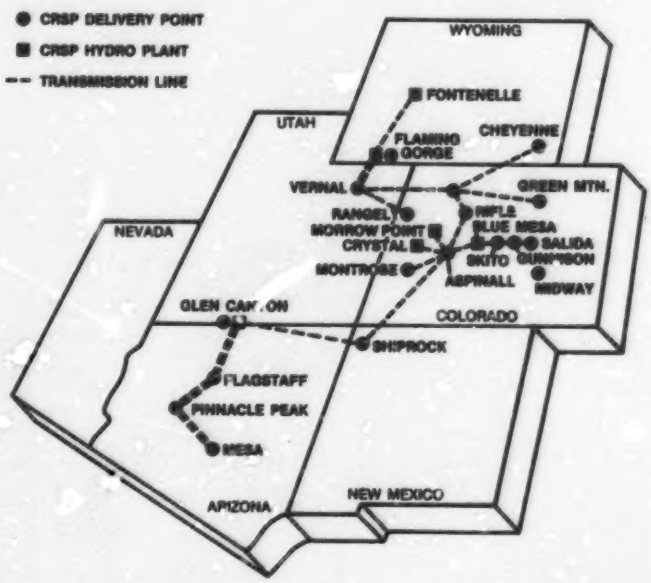
Glen Canyon substation adjacent to dam.

Fiscal Year 1983

Income from the sale of storage project power in fiscal year 1983 amounted to about $106 million, which was an increase in nearly $32 million from fiscal year 1982. In addition to normal generation and sales, the project purchased and resold 788,475,000 kWh (kilowatt-hours). Energy sales in fiscal year 1983 were nearly 9 billion kWh.

Fiscal Year 1983
Energy Sales and Revenues by States

	KwH	Dollars
Arizona	1,587,216,552	$ 15,269,839.79
California	908,719,000	22,320,502.63
Colorado	1,751,348,403	15,263,290.95
Nevada	685,730,013	16,200,825.33
New Mexico	1,382,259,363	13,951,270.75
Texas	2,070,000	62,208.50
Utah	2,044,192,563	16,867,605.32
Wyoming	684,111,971	6,375,463.53
Totals	9,045,647,865	$106,311,006.80



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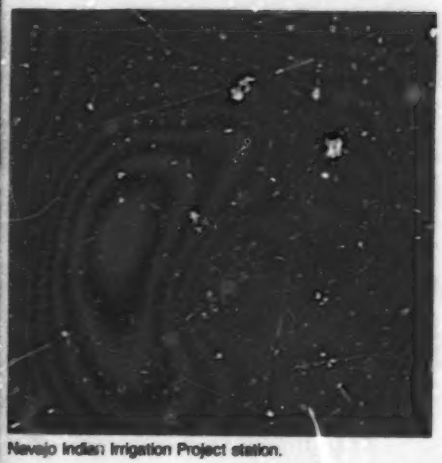
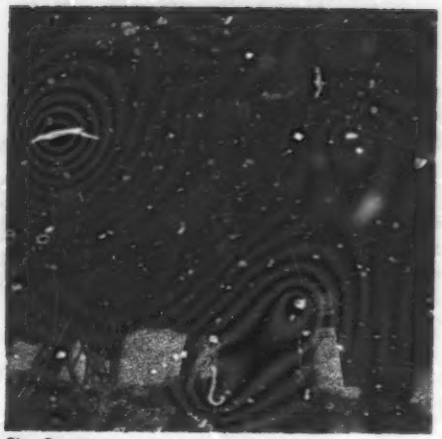
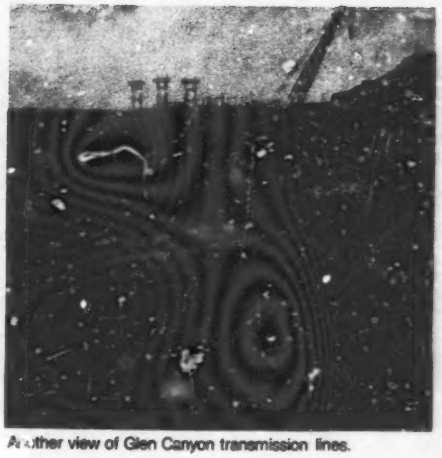


Navajo Indian Irrigation Project station.



Glen Canyon transmission lines seen at left.



Another view of Glen Canyon transmission lines.

Source	Kilowatt-hours
Net Generation	
Blue Mesa	336,102,400
Crystal	221,721,000
Flaming Gorge	878,160,000
Fontenelle	73,159,000
Glen Canyon	6,807,615,000
Morrow Point	464,112,000
Subtotal Generation	8,780,870,000
Miscellaneous	
Interchange Receipts	855,463,268[1]
Energy Charges to Transmission Service Customers[2]	259,720,000
Subtotal Miscellaneous	1,115,183,268
Total Energy Available	10,684,528,268

[1]Does not include 37,769,000 kWh interchange settlement with the Provo River Project or 5,020,706 kWh interchange settlement with the Rio Grande Project, and accounted for as energy purchases.

[2]Transmission losses incurred by the Salt River Project in operation of its Craig-Hayden/Pinnacle Peak power exchange agreement with the United States, and losses charged to utilities wheeling from non-Western sources over Western's transmission system.

Disposition	Dollars	Kilowatt-hours
Firm Energy Sales		7,018,637,761
Nonfirm Energy Sales		
Emergency	$ 13,874,496	
Fuel Replacement (Oil Conservation)	2,013,135,608	2,027,010,104
Interchange Deliveries		792,980,204
System Losses		845,900,199[3]
Total Energy Distributed		10,648,528,268

CRSP Revenue		Dollars
Firm Power Sales		$60,360,833.87
Nonfirm Power Sales		
Emergency Power	$ 246,476.25	
Fuel Replacement (Oil Conservation) Energy	45,599,521.68	
Reserve Capacity	104,175.00	45,950,172.93
Parker-Davis Project Firming		0
Transmission Service Revenue		2,382,433.35
Miscellaneous Revenue		312,114.64
Total Gross Revenue		$109,005,554.79

[3]System Losses include Energy Charges to Transmission Customers, which are also counted as Sources of Energy.

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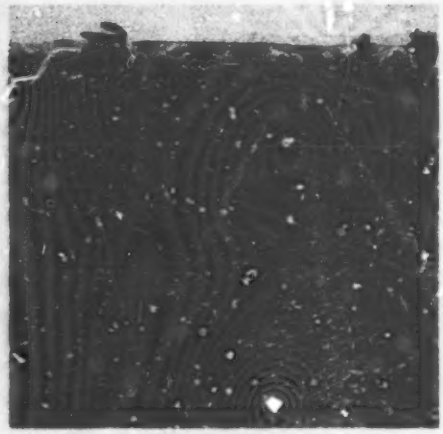
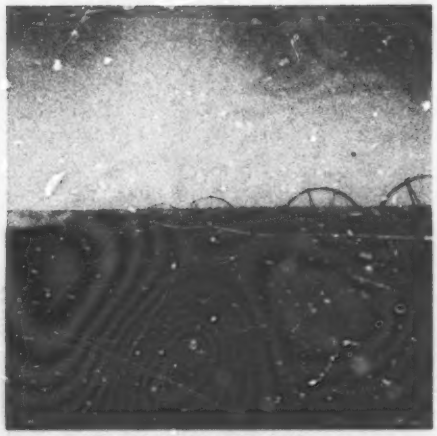
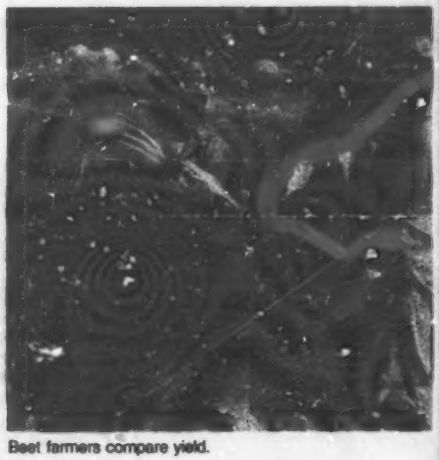
Irrigation



Irrigating farm in southwest Colorado.



Watering alfalfa with side-roll-type sprinklers.



Beet farmers compare yield.

During the 1983 irrigation season, CRSP participating projects delivered 273,607 acre-feet of water. Total gross crop value from 116,406 acres of irrigated farm land was $20,148,382 equaling $2,036.20 per irrigated acre. The table shows figures by project for calendar year 1983.

State and project	Irrigable area for service (acres)	Area irrigated (acres)	Delivered to farms (acre-feet)	Gross crop value (dollars) 1983 Total	1983 Irrigated (Per acre)	To date Accumulated	To date First year
Colorado:							
Bostwick Park	5,180	4,246	3,733	695,330	164,000	8,118,100	1979
Florida	19,450	14,484	24,453	2,395,601	165.40	30,253,100	1964
Paonia	15,300	10,796	57,950	4,162,133	405.15	57,589,296	1951
Silt	7,044	5,322	16,824	945,876	178.90	12,495,405	1968
Smith Fork	9,479	8,924	10,925	1,199,791	134.44	15,510,479	1963
Utah:							
CUP							
Bonneville	26,046	17,615	85,841	4,511,967	415.00	34,183,203	1972
Vernal	14,700	13,848	51,238	3,073,015	221.00	31,058,996	1963
New Mexico:							
Hammond	3,933	3,055	15,893	864,655	292.85	11,932,003	1962
Wyoming:							
Lyman	38,678	38,116	6,750	2,299,984	59.46	16,980,048	1972
Total	139,810	116,406	273,607	$20,148,382	$2,036.20	$218,120,628	

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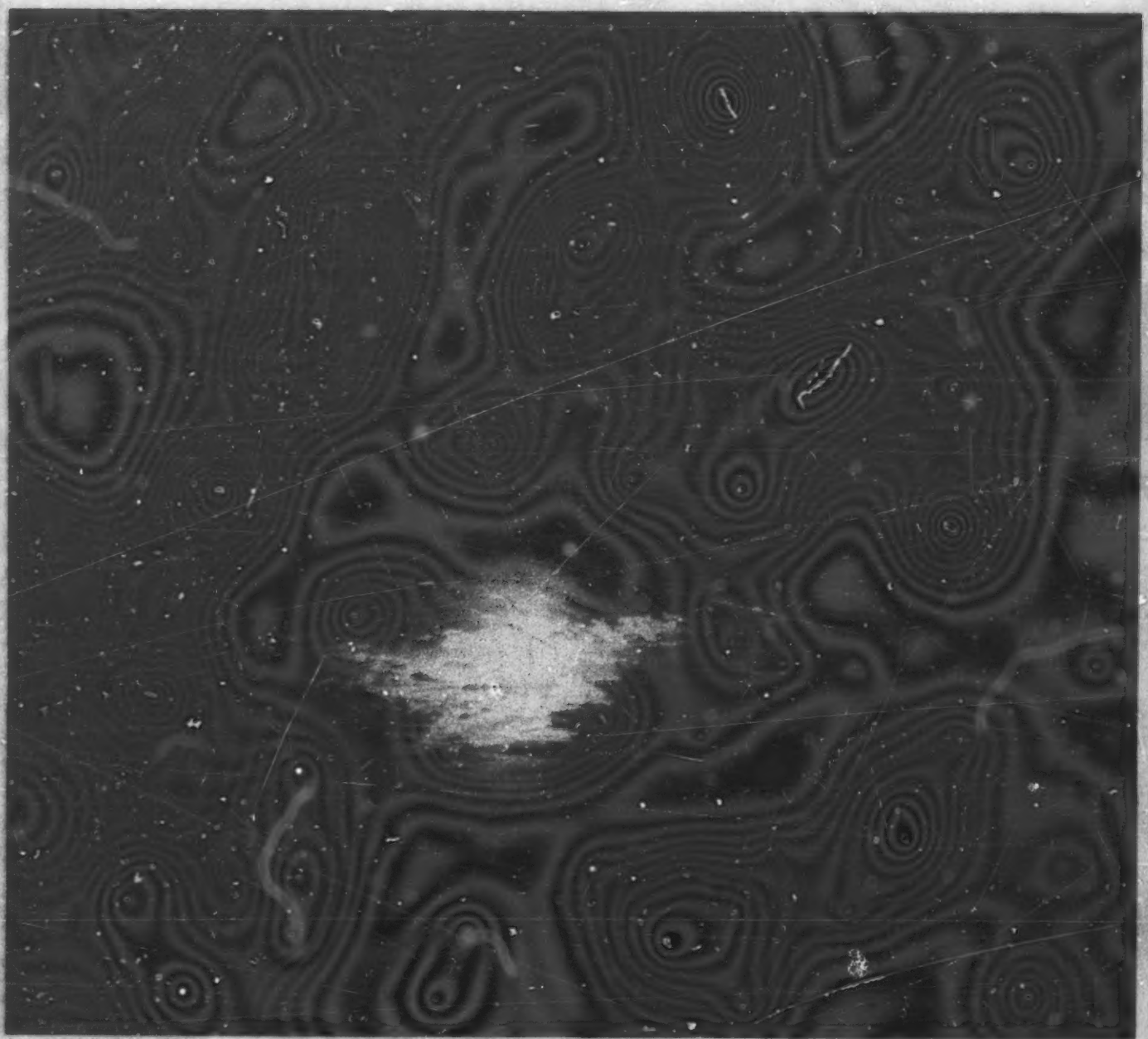

A boy and his horse at sunrise.

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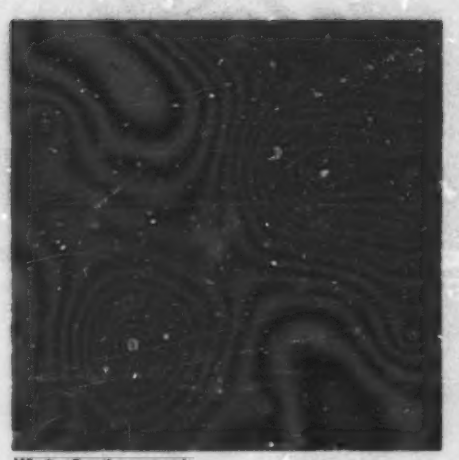
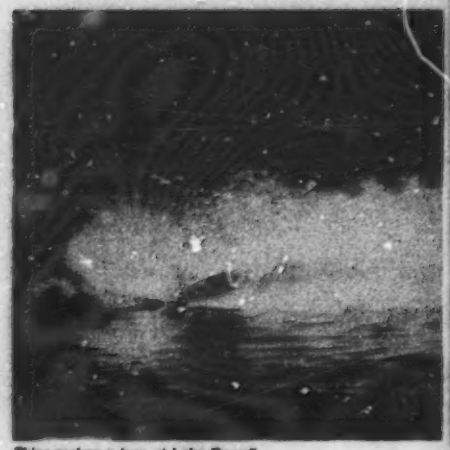
Recreation

Novice slider receives instructions.



Windsurfing the reservoir.



Slider makes a turn at Lake Powell.

Operations: The Bureau of Reclamation administered recreation facilities at three Colorado River Storage Project reservoirs. Fontenelle Reservoir of the Seedskadee Project in Wyoming is administered by the Flaming Gorge Office in Dutch John, Utah. Red Fleet Reservoir of the Jensen Unit, Central Utah Project, was opened to recreation use in 1982. The area is a fee area and is administered under a service contract with a private company. Temporary and partially completed facilities at Soldier Creek were administered by the Forest Service.

Recreation Planning: Recreation planning for projects under planning investigations status continued on Diamond Fork of the Bonneville Unit, Central Utah Project.

Recreation Construction: Dallas Creek Project, Colorado — A boat ramp to serve Ridgway Reservoir is included in the contract for the construction of the dam presently under way.

Dolores Project, Colorado: A boat ramp to serve the McPhee Reservoir was constructed. Resulting from the Jobs Bill, contracts were awarded and construction is under way on the McPhee Recreation Area (campgrounds, picnic areas, overlook and parking), House Creek boat ramp, and House Creek road construction.

Central Utah Project, Bonneville Unit, Utah: Construction of campground, picnic, and marina facilities were completed at Soldier Creek. The facilities will be open for public use in the spring of 1984 except for the marina contract which will be awarded later in the year. Construction of a fisherman access area at Soldier Creek Dam was begun and will be completed in the spring of 1984. Strawberry Bay Recreation Area (including campgrounds, picnic areas, fisherman access and marina) are under construction and scheduled for completion in the fall of 1984. Other areas at Strawberry that are presently under construction and will be completed next spring or summer are Haws Point, Chicken Creek East, and Chicken Creek West fisherman access areas.

Other contracts at Strawberry including electrical distribution, water well, administrative, and operation and maintenance site work were awarded during the year and have been completed or are presently under construction. In the Upper Stillwater drainage, there are two campgrounds, including a picnic area and a fisherman access area, presently under construction.

Navajo Project, New Mexico: Planning for construction of the Navajo tailwater is presently under way. Construction is expected during this next year.

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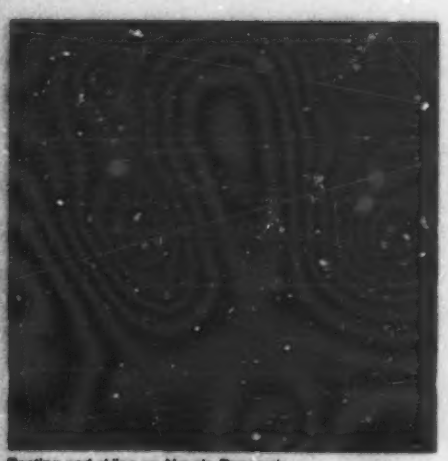
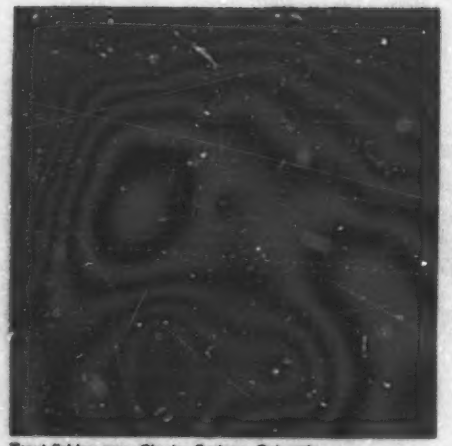
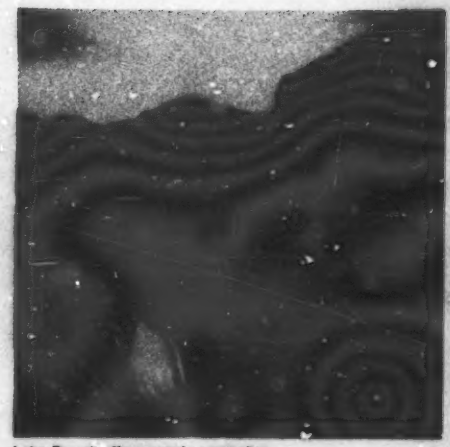


Boating and skiing on Navajo Reservoir.



Trout fishing near Glacier Springs, Colorado.



Lake Powell offers scenic campsites.

Reservoir Visitations (Estimated)

Reservoir	Year First Visited	1977	1978	1979	1980	1981	1982	1983
Curecanti (Aspinall)	1966	885,895	727,906	809,007	891,490	988,951	994,265	1,050,217
Crawford	1963	61,071	98,813	106,313	94,684	63,388	83,054	90,393
Flaming Gorge	1962	680,870	661,120	620,000	815,900	816,000	1,833,100	1,758,663
Fontenelle	1965	50,901	63,784	65,049	48,666	42,560	74,000	74,000
Haron	1973	120,190	171,938	104,843	136,334	145,000	106,301	150,204
Huntington North	1967	92,011	117,377	94,923	98,900	73,291	73,700	77,365
Joes Valley	1967	137,150	115,200	91,950	82,773	104,080	93,320	101,300
Lake Powell	1962	2,127,419	2,211,818	1,733,949	1,646,657	1,820,163	1,841,356	1,826,572
Lemon	1964	96,815	93,113	45,390	44,897	66,129	66,537	79,844
Meeks Cabin	1973	995	1,210	990	1,130	1,150	2,500	3,878
Navajo	1963	486,743	427,512	312,671	335,484	401,351	405,432	455,620
Paonia	1962	15,225	15,670	17,312	14,826	22,384	18,955	24,249
Red Fleet	1962	—	—	—	—	—	9,751	11,579
Rifle Gap	1967	105,776	138,275	157,612	147,773	148,208	149,000	111,312
Silver Jack	1973	31,680	33,400	34,575	35,970	35,500	34,400	44,550
Starvation	1970	106,*51	97,099	72,160	32,035	37,909	40,000	25,768
Stateline	1962	—	—	—	—	—	2,276	3,696
Steinaker	1962	64,370	131,179	103,872	71,384	104,357	105,400	105,111
Strawberry Enlargement		68,264	56,672	59,643	56,661	54,640	133,800	279,871
TOTALS		5,111,326	5,182,066	4,430,259	4,555,546	4,924,879	6,068,147	6,274,192

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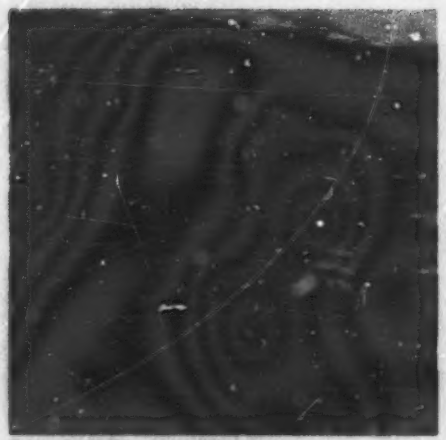
Social

Powder snow for the avid skier.



Soldier Creek Reservoir is fishing mecca.

Sheep grazing along Dallas Creek.

To preserve and enhance the quality of life through planning, construction, operation and management of the Colorado River Storage Project and participating projects, social assessment has become an integral part of the Bureau of Reclamation program. Consideration of social effects begins early in the planning stages of a project.

In addition to the social effects of economic and employment opportunities provided through irrigation, power generation and industrial water, the development of land and water for municipal, recreation, and fish and wildlife purposes also affects people in the project area. Preservation and enhancement of the affected population's social well-being are both emphasized in the social assessment process.

Major social, economic, and demographic studies continued on the Central Utah Project's Uintah Unit and the Bonneville Unit, Diamond Fork Power System; and the McElmo Creek, Glenwood-Dotsero Springs, Uinta Basin, and Price-San Rafael Rivers salinity control units of the Colorado River Water Quality Improvement Program (CRWQIP).

A unique monitoring study was initiated on the Dolores Project construction program. This study will test current procedures for impact projection and effect analysis while providing the Cortez Projects Office an enhanced data base for continued public involvement. Major studies of the Dirty Devil River, CRWQIP, were initiated. Studies of the Big Sandy River and Lower Gunnison Basin units of the CRWQIP were completed.

Many of these studies utilize the Bureau of Reclamation Economic Assessment Model (BREAM) and the Multi-Attribute Tradeoff System (MATS) to place economic and demographic present and future conditions, with and without the proposed projects, into perspective. Subjective non-statistical effects are analyzed using mutually enhancing social assessment and public involvement techniques in all project investigations.

Although these studies are conducted by regional and project office personnel, close coordination is maintained with the project area's affected population. Cooperation with State and local planners, demographers, and researchers, has provided a useful technique for avoiding duplication and enhancing the quality of both Reclamation and non-Reclamation studies.

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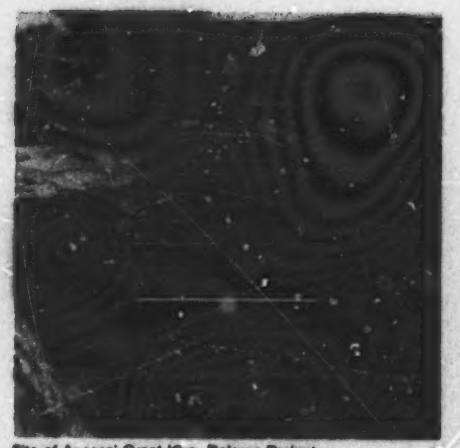
Cultural

Abandoned barn in central Utah.



Site of Anasazi Great Kiva, Dolores Project.

Harvest pleases littlest Navajos.

Our cultural heritage is a nonrenewable resource. Recognizing this, the cultural resources program, implemented by the Upper Colorado Region, concentrates on providing the planning and construction branches with the necessary data on cultural resources to minimize any adverse effects of Reclamation projects. In-house and contract surveys are conducted to locate, test, and evaluate the resources and, if necessary, data recovery is undertaken through contract to mitigate major project impacts.

The initial stage of location and evaluation of the data is accomplished in-house as well as by contract. The Grand Junction Projects Office, the Utah Projects Office, and the Cortez Construction Office have archeologists. This provides the avenue to integrate the management of cultural resources with the overall goals of the Bureau of Reclamation. The Utah Projects Office completed 36 in-house surveys and reported the findings to the public and archeological communities. In addition, the Strawberry Valley Historical District mitigation has been completed.

Three projects, under Executive Order 11593, deal with surveys of the Bonneville and Vernal Units of the Central Utah Project and the Provo River Project. The Class III surveys have been completed by the contractor and the reports are completed.

Ten in-house surveys relating to the Colorado River Storage Project were accomplished by the Grand Junction Projects Office. An inventory of artifacts recovered during the Old Dallas Historical Archeological Project was completed. Local museums have been contacted to display a selected sample of the artifacts from the project. The report is in the first stages of editing and is anticipated to be completed by December 1984.

The Upper Colorado Region is divided into three areas covered by three Basic Ordering Agreements to conduct surveys which are too large or too time-consuming to be done with Reclamation resources. The areas are the West Slope of Colorado, the Four Corners area, and Utah.

The largest ongoing project in the Upper Colorado Region is the Dolores Archeological Project (DAP). The project began in 1978, with the summer of 1982 seeing the completion of mitigation work in all but three sites. Excavation has provided the archeologist with the data and artifacts to interpret the Anasazi — the prehistoric people of the area. The DAP personnel will have recovered information from more than 200 sites within the project boundaries by the close of the 1983 field season. The final reports are due in 1986.

These cultural resources belong to the people. To this end, the Bureau of Reclamation has submitted to the E&R Center the design data package for the Anasazi Heritage Center. Once constructed, the center will house the artifacts recovered during the DAP activity and provide the public with a glimpse of the past that is now preserved as a national trust.

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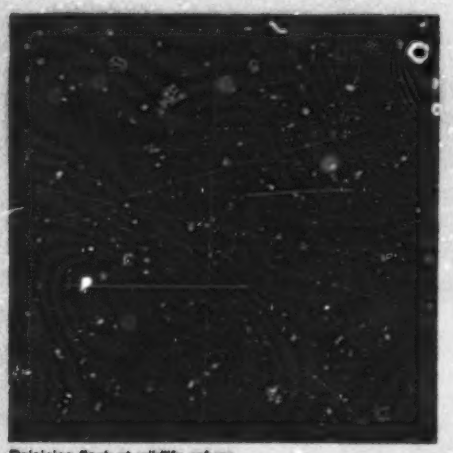
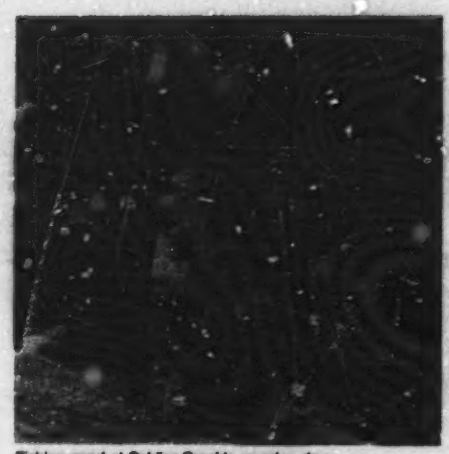
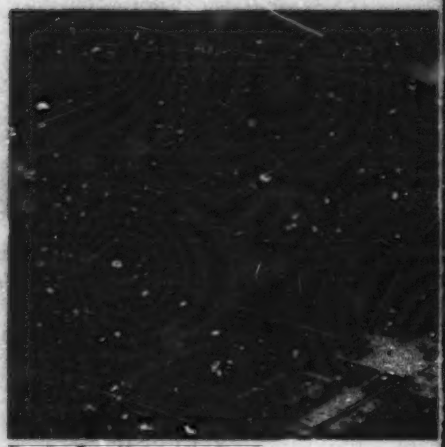
Fish and Wildlife



Rejoining flock at wildlife refuge.



Fishing good at Soldier Creek's opening day.



Dangling Rope Marina, Lake Powell.

Two national fish hatcheries are performing important roles in the joint State-Federal approach to meeting fish stocking requirements at CRSP reservoirs.

Jones Hole National Fish Hatchery: The hatchery is located in a deep canyon on Jones Hole Creek near Dinosaur National Monument in northeastern Utah. In 1983, the hatchery produced 176,328 pounds of fish.

Hotchkiss National Fish Hatchery: The hatchery is located on the north fork of the Gunnison River near Hotchkiss, Colo. Its output of 107,194 pounds of fish went principally for stocking requirements of Blue Mesa, Crawford, Lemon, Silver Jack Reservoirs in Colorado, and Navajo Reservoir in Colorado and New Mexico.

One national wildlife refuge and three waterfowl areas under State administration are now being developed.

Seedskadee National Wildlife Refuge: The refuge lies along the Green River below Fontenelle Dam, Wyo., and since 1966, has been administered by the Fish and Wildlife Service. Development of refuge lands is continuing during the year.

Brown's Park Waterfowl Management Area: The area, under administration of the Utah Division of Wildlife Resources, is located below Flaming Gorge Reservoir on the Green River near the Utah-Colorado State line. The overall management area is attracting numerous resident and migratory game bird populations and is increasing in public popularity as a fishing, hunting, and bird-watching area.

Miller Mesa Waterfowl Area: The area is on the west shore of the Navajo Reservoir just south of the Colorado-New Mexico State line. A small reservoir and two terraced ponds have been completed and filled. About 170 acres of agricultural lands have been planted with barley, oats, wheat, and alfalfa for wildlife management purposes. Waterfowl use patterns indicate that birds from other agricultural and nesting areas in the San Juan Valley are using the Miller Mesa site with increasing frequency.

Desert Lake Waterfowl Management Area: The area comprises 2,480 acres of acquired and public domain land in eastern Utah near Huntington North Reservoir. Administered by Utah Division of Wildlife Resources since January 1968, the area's contribution to waterfowl resources management was significantly increased by rehabilitation to the historic Desert Lake Dike and completion of five additional diked areas below the existing impoundment.

A number of measures have been initiated to mitigate fishery and big game losses caused by the construction of CRSP features.

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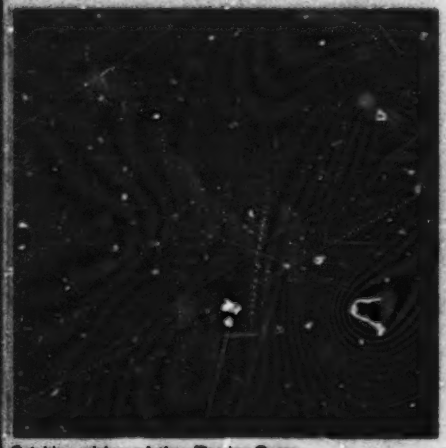
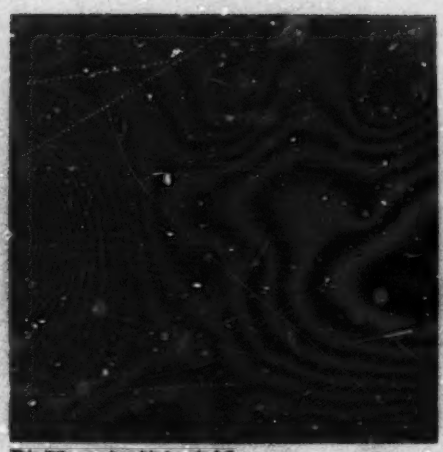
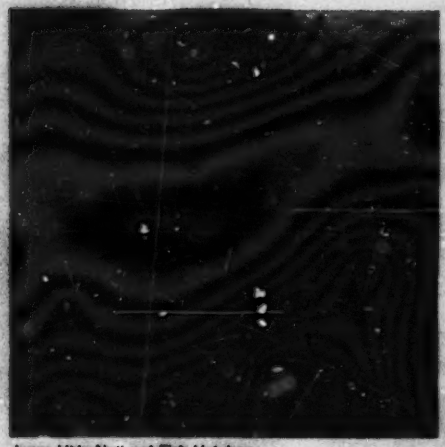
Fishery Statistics



Catching rainbows below Flaming Gorge.



This little one has his hands full.



Jones Hole National Fish Hatchery.

	1978	1979	1980	1981	1982	1983
Aspinall Storage Unit						
Reservoirs:						
Fish Planted	1,042,000	1,750,919	1,539,370	2,399,000	3,075,725	3,082,917
Fish Caught	150,000	No records kept	268,671	150,000	*311,793	*437,175
Flaming Gorge Storage Unit						
Reservoir:						
Fish Planted	3,200,000	3,763,725	3,285,823	4,070,000	1,147,000	1,913,621
Fish Caught	256,000	200,000	103,000	171,500	171,500	76,308
River below dam:						
Fish Caught — 10 mile	39,000	31,368	48,370	92,000	50,000	48,557
Glen Canyon Storage Unit						
Reservoir:						
Fish Planted	254,000	222,369	10,000	0	63,000	0
Fish Caught	900,000	897,273	384,000	294,800	294,800	250,000
River below dam:						
Fish Caught — Lee's Ferry	10,000	9,500	No records kept	10,000	No records kept	No records kept
Navajo Storage Unit						
Reservoir:						
Fish Planted	101,000	279,374	452,650	562,000	1,071,222	1,455,386
Fish Caught	235,000	235,000	321,000	310,000	271,000	523,000
River below dam:						
Fish Caught — 6 mile	130,000	60,000	58,725	13,500	44,860	No Records Kept
Totals						
Reservoirs:						
Fish Caught	4,597,000	6,016,387	5,341,843	7,031,000	1,049,093	1,286,483
Fish Planted	1,537,000	1,332,273	1,077,611	926,300	5,356,947	6,451,924
River below dam:						
Fish Caught	179,000	100,868	107,095	115,500	94,860	

*Fish catch for June to October only, does not include ice fishing.

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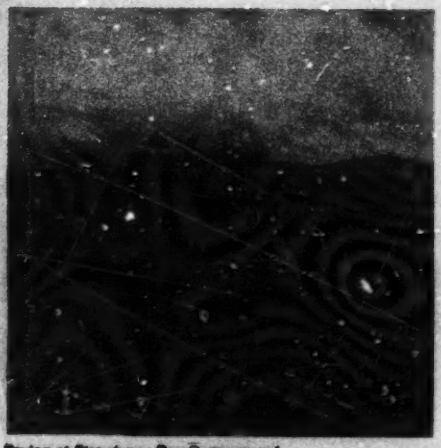
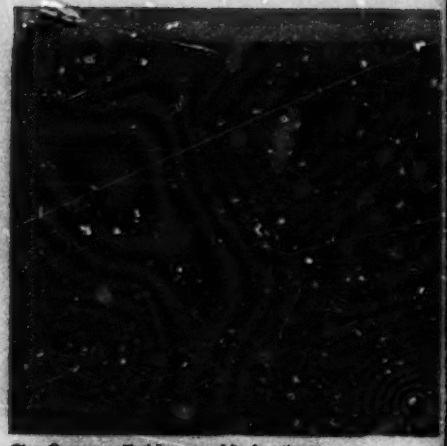
Comparative Balance Sheet



Paving at Strawberry Bay Campground.

Delivering concrete for Ridgway spillway.



Glen Canyon spilled for one of its few times.

Assets and Other Debits	September 30, 1993	September 30, 1992	Increase or (Decrease)
	(Thousands of Dollars)		
Plant, Property, and Equipment			
Multipurpose Plant	592,116	588,435	3,681
Irrigation Plant	14,796	14,796	-0-
Electric Plant	381,046	369,300	11,746
M&I Water Plant	16,608	30,050	(13,442)
Fish and Wildlife Facilities	20,570	21,668	(1,098)
Public Recreation Facilities	28,055	25,604	2,451
Construction Work in Progress	974,405	807,623	166,782
Capitalized Movable Equipment	13,197	9,113	4,084
Other Physical Property	486	486	-0-
Service Facilities	10,939	3,432	7,507
Total Plant, Property, and Equipment	2,052,218	1,870,507	181,711
Less: Accumulated Depreciation and Replacement	(30,369)	(27,678)	(2,691)
Net Plant, Property, and Equipment	2,021,849	1,842,829	179,020
Investigations	27,942	20,832	7,110
Transitional Development	6,090	5,681	409
Power Rights	9,415	7,021	2,394
Current Assets			
Cash	118,236	105,603	12,633
Deposit Funds	770	1,173	(403)
Accounts Receivable	23,044	11,324	11,720
Materials and Supplies	1,234	1,192	42
Prepayments and Advances	1,166	78	1,088
Total Current Assets	144,450	119,370	25,080
Long-term Receivables — Repayment Contracts	60,639	60,794	(155)
Escrow Accounts	6,794	5,693	1,101
Other Deferred Debits	35,818	36,270	548
Total Assets and Other Debits	2,313,997	2,098,490	215,507

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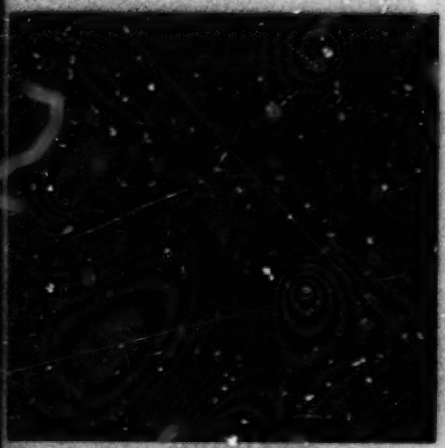

Glen's left spillway tunnel damaged heavily.

Large debris washed into left spillway.

Public Affairs Office documents damage.

(Thousands of Dollars)

Liabilities and Other Credits	September 30, 1983	Increase September 30, 1982	Increase or (Decrease)
Investment of U.S. Government			
Congressional Appropriations	1,998,443	1,815,567	182,876
Interest During Construction Capitalized	118,164	102,188	15,976
Transfer of Property and Services	17,393	32,485	(15,092)
Interest Accrued on Investments	214,628	201,581	13,047
Contributions	37,269	37,095	174
Accumulated Net Income			
Project Repayment	6,163	5,914	249
Other Income	183,807	128,124	55,683
Total Accumulated Net Income	189,970	134,038	55,932[1]
Total Investment of U.S. Government	2,575,867	2,322,954	252,913
Less: Funds Returned to U.S. Treasury	(381,652)	(336,212)	(45,440)
Less: Nonreimbursable Expense	(18,612)	(13,440)	(5,172)
Net Investment of U.S. Government	2,175,603	1,973,302	202,301
Current Liabilities			
Accounts Payable	32,799	21,736	11,063
Other	777	1,184	(407)
Total Current Liabilities	33,576	22,920	10,656
Deferred Income — Repayment Contracts	60,639	60,794	(155)
Liability for Escrow Accounts	6,794	5,693	1,101
Other Deferred Credits	37,395	35,781	1,604
Total Liabilities and Other Credits	2,313,997	2,098,490	215,507

[1]Increase in Accumulated Net Income of $55,932 represents $52,757 income from fiscal year 1983 Income and Expense Summary and $3,175 adjustment for prior periods.

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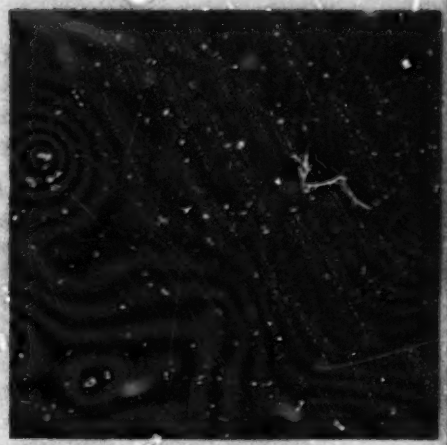
Income and Expense Summary

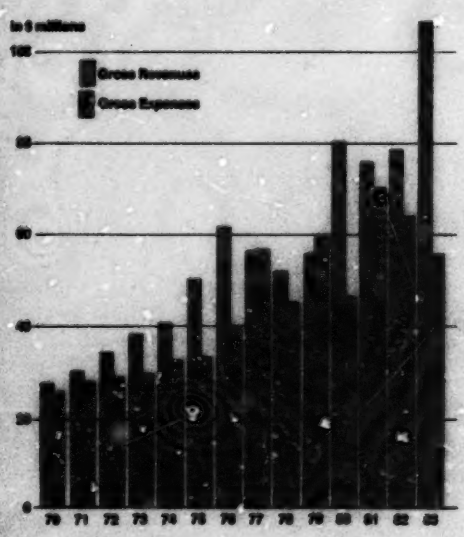
Damage somewhat less in right spillway tunnel.

Adit mined into right spillway for repairs.



Loading approach for Current Creek Road.

Income and Expense



	Fiscal Year 1983	Fiscal Year 1982	Increase or (Decrease)
Gross Income			
Power	$106,030,243	$74,229,446	$31,800,797
Irrigation	176,962	11,200	165,762
Municipal & Industrial (M&I)	1,626,994	1,551,216	75,778
Net Nonoperating Income	263,230	261,854	1,376
Project Repayment	249,523	1,015,695	(766,172)
Total Income	108,346,952	77,069,411	31,277,541
Deductions			
O&M Expense			
Power	40,154,974	49,168,549	(9,013,575)
Irrigation	176,962	11,200	165,762
M&I	438,035	123,356	314,679
Depreciation and Replacement			
Power	2,628,027	2,600,001	28,026
M&I	640	1,600	(960)
Interest on Investment			
Power	11,734,233	11,145,115	589,118
M&I	457,205	460,307	(3,102)
Total Deductions	55,590,076	63,510,128	(7,920,052)
Total Net Income (Loss)	52,756,876	13,559,283	39,197,593

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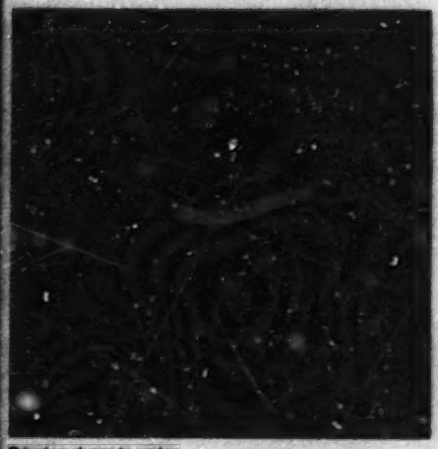
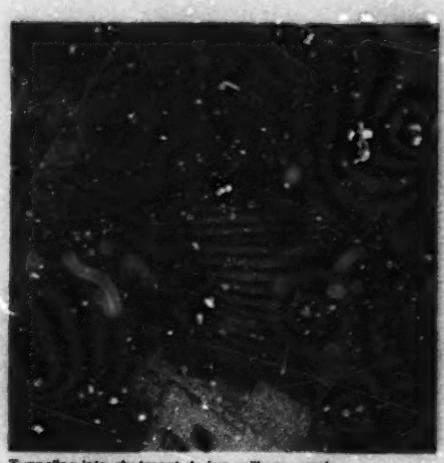
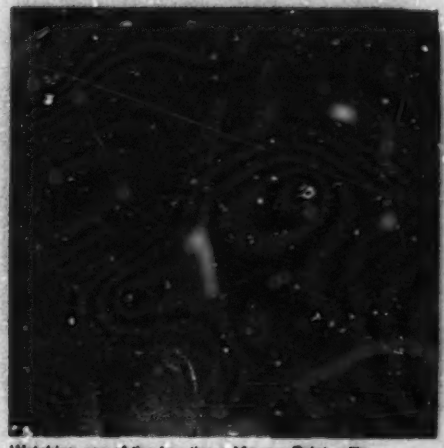
Cash Receipts and Disposition



Bringing sheep to water.



Tunneling into abutment during spillway repair.



Watching one of the few times Morrow Point spills.

Funds returned to the Federal Treasury during fiscal year 1983 amounted to $45,440,378. Payments of interest totaled $12,473,643, and $32,966,313 was applied on the principal.

Cash receipts to date from all sources and cash disposition are shown in the following tabulation. (This statement is on the cash basis and amounts shown will not necessarily coincide with other statements in this report which are presented on an accrual basis.)

	Fiscal Year 1983	Total to Date
Cash		
Total Cash Receipts	$98,378,956	$832,572,449
Disposition		
Quality of Water Expenditures[1]	203,512	1,749,845
Emergency Fund Expenditures	-0-	1,724,144
Consumptive Use Studies[1]	69,537	1,955,746
Utilized for Operations	46,153,939	407,151,481
Payments on Interest — Power	11,722,509	206,925,169
Payments on Interest — M&I Water	751,134	6,913,256
Payments on Investment — Power	31,434,251	152,386,754
Payments on Investment — M&I Water	1,230,979	12,221,086
Payments on Investment — Irrigation	301,083	3,178,812
Other Returns to U.S. Treasury	422	21,980
Retained for Operations	6,511,590	38,339,176
Total	98,378,956	832,572,449

[1]Although quality of water and consumptive use studies are financed from operating revenue, the repayable debt of the storage project and participating projects is reduced an equal amount to compensate.

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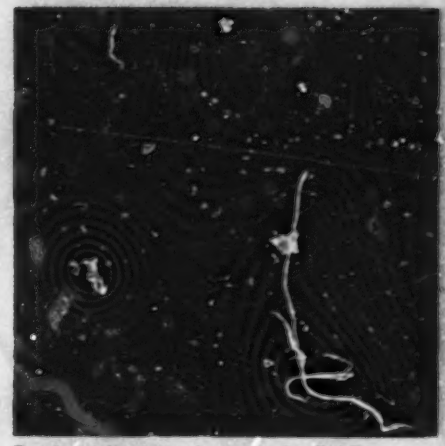
Allocation of Federal Investment

Ridgway Dam inlake structure under construction.

Installing underdrain at Ridgway Dam.



Tyzack pumping plant under construction, Red Fleet.

A preliminary allocation of total estimated costs of all authorized projects is summarized in this table.

Project Costs Allocated (Excludes Section 8 Costs)	(Thousands of Dollars)
Reimbursable Allocations:	
Irrigation	$2,096,250
Power	1,713,816
Municipal & Industrial Water	1,031,114
Other	3,732
Total	$4,846,912
Nonreimbursable Allocations:	
Flood Control	$ 49,258
Fish and Wildlife	379,797
Recreation	7,649
Road Relocation Costs	33,899
Cultural Resources Activities	33,098
Safety of Dams	11,428
Total	$ 515,129
Other:	
Navajo Indian Irrigation Project[1]	$ 659,581
Total Cost Allocated	$6,021,622
Section 8 Costs:	
Fish and Wildlife	$ 181,992
Recreation	173,853
Total Costs Not Allocated	$ 355,845
Total	$6,377,467

[1]Repayment of construction costs is subject to the act of July 1, 1932 (47 Stat. 564).

Allocations to the various purposes authorized under Reclamation law are required by Sec. 6 of Public Law 84-485, the Colorado River Storage Project Act, excluding specific fish and wildlife and recreation expenditures authorized by Sec. 8 of this act. Final allocation reports have been prepared on the Colorado River Storage Project, and on Emery County, Florida, Paonia, Seedskadee, Silt, and Smith Fork Participating Projects, and the Vernal Unit of the Central Utah Project.

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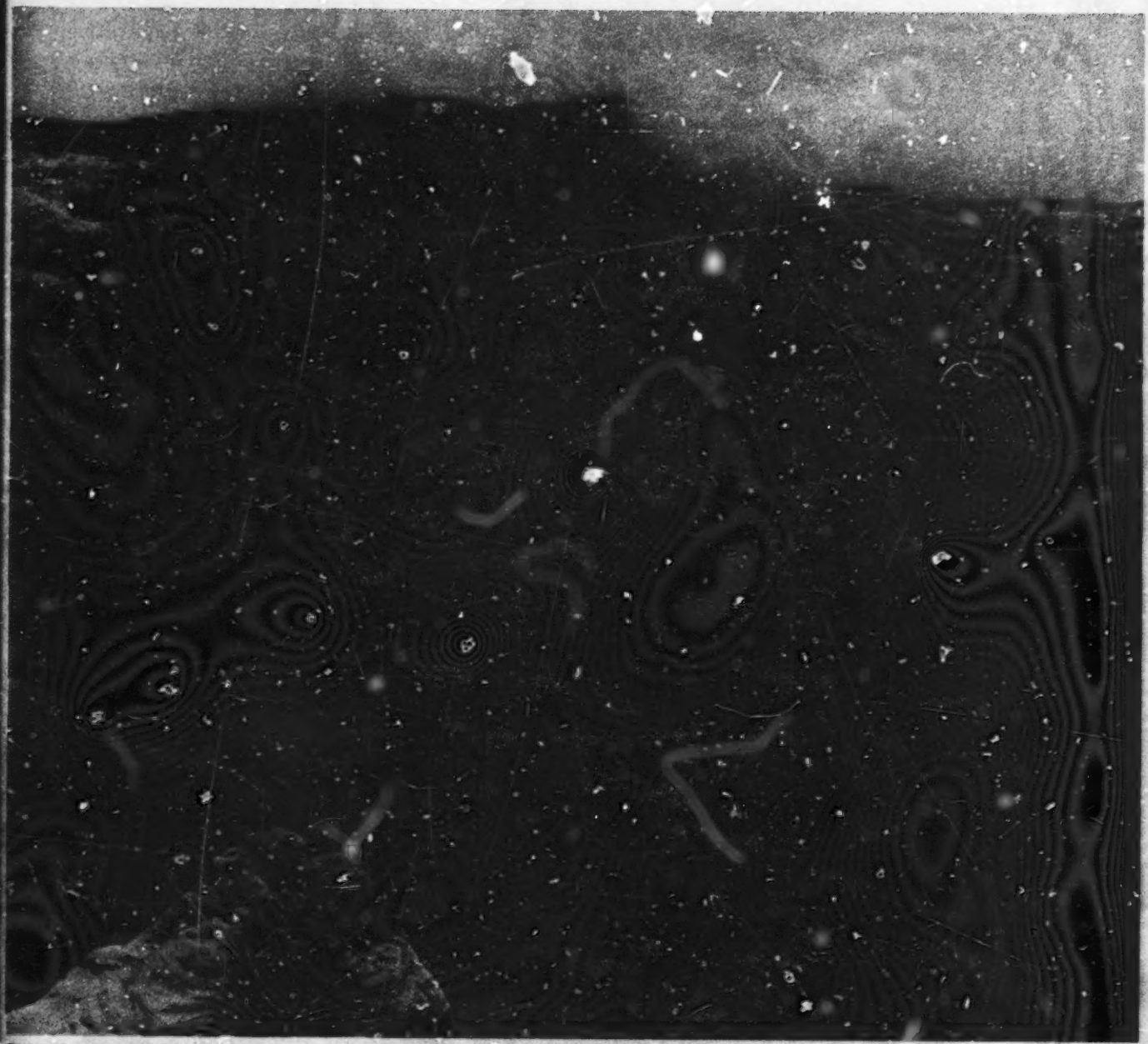

Skaters dart across Lake Powell waters.

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Estimated Project Costs

Project	Costs through September 30, 1983				Estimated Balance to Complete	Total Estimated Cost
	Project Costs	Interest During Construction	Section B			
			Fish & Wildlife	Recreation		
Storage Project:						
Wayne N. Aspinall Unit, Colorado	$ 140,482,545	$ 13,801,434	$ 3,241,630	$17,979,216	$ 7,791,366	$ 183,296,191
Flaming Gorge Unit, Utah	68,674,642	3,483,762	10,814,160	4,557,361	4,805,398	92,335,323
Glen Canyon Unit, Arizona	260,153,337	22,366,379	497,932	9,466,845	668,118	293,152,611
Navajo Unit, New Mexico	39,967,439	318,150	665,200	3,898,947	9,204,839	54,054,625
Transmission Division	236,264,080	13,950,810			300,559,464	550,774,354
Subtotal Storage Project	$ 745,542,043	$ 53,920,535	$15,218,922	$35,902,369	$ 323,029,235	$1,173,613,104
Participating Projects:						
State of Colorado						
Bostwick Park	9,119,856			1,156,190		10,276,046
Dallas Creek	59,739,173	5,407,311	1,763,371	6,517,159	70,281,986	143,709,000
Dolores	146,021,117	2,690,829	3,024,391	1,938,137	267,557,526	421,232,000
Florida	11,326,194			103,032		11,429,226
Fruitland Mesa	3,313,538				153,465,462	156,779,000
Paonia	8,173,927		10,000	94,707		8,278,634
San Miguel	3,805,648				119,608,352	123,414,000
Silt	7,450,244			60,027		7,510,271
Smith Fork	4,585,408			104,207		4,689,615
West Divide	2,919,677				262,476,323	265,396,000
States of Colorado — New Mexico						
Animas-LaPlata	5,081,560				605,779,440	610,861,000
San Juan-Chama	75,007,412	4,391,962	1,573,934	900,578	36,711,702	118,585,588
States of Colorado — Wyoming						
Savery-Pot Hook	2,429,756				134,298,244	136,728,000
State of New Mexico						
Hammond	7,459,488		5,800			7,465,288
Navajo Indian Irrigation	229,752,007				429,828,993	659,581,000
State of Utah						
Central Utah Project						
Bonneville Unit	411,012,448	45,060,919	10,487,528	20,699,834	1,541,980,271	2,029,241,000
Jensen Unit	53,812,500	4,806,766	50,537	1,923,950	$19,342,247	79,936,000
Uintah Unit	6,563,400				167,443,600	174,007,000
Upalco Unit	6,644,106	48,253			95,630,641	102,323,000
Vernal Unit	10,414,723	43,615	16,198	110,495	2,178	10,587,209
Emery County	15,276,901	143,425	1,027,878	74,933	1,467,189	17,990,326
State of Wyoming						
LaBarge	222,108				5,120,892	5,343,000
Lyman	32,550,437	120,925	925,374	1,286,632	1,745,867	36,629,235
Seedskadee	24,213,280	1,492,954	5,440,825	636,989	15,906,186	47,690,234
Subtotal Participating Projects	$1,136,894,908	$ 64,206,959	$24,325,836	$35,606,870	$3,928,647,099	$5,189,681,672
Other Facilities						
Hotchkiss Nat'l. Fish Hatchery, Colorado			1,704,632		6,352,468	8,057,100
Jones Hole Nat'l. Fish Hatchery, Utah			4,916,601		1,199,299	6,115,900
Subtotal Other Facilities			$ 6,621,233		$ 7,551,767	$ 14,173,000
Grand Total	$1,882,436,951	$118,127,494	$46,165,991	$71,509,239	$4,259,228,101	$6,377,467,776

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Estimated Project Costs by Purpose

September 30, 1963 (Thousands of Dollars)

	Estimated Total Project Costs	Irrigation	Power	Municipal and Industrial Water	Flood Control	Fish and Wildlife	Recreation	Highway improvements	Cultural Resources	Safety of Dams	Other[b]
Storage Project:											
Wayne N. Aspinall Unit, Colorado	$ 183,296	$ 3,051	$ 150,680	.	$ 1,784	$ 5,599	$ 21,998	$ 184			
Flaming Gorge Unit, Utah	92,335	17,618	46,430			23,505	4,557				$ 225
Glen Canyon Unit, Arizona	293,153	55,184	215,214	$ 3,095		7,577	9,467				2,616
Navajo Unit, New Mexico	54,055	30,046		4,397	2,212	12,101	5,255				44
Transmission Division	550,774		550,059								715
Subtotal Storage Project	$1,173,613	$ 105,899	$ 962,383	$ 7,492	$ 3,996	$ 48,782	$ 41,277	$ 184			$3,600
Participating Projects:											
State of Colorado											
Bostwick Park	10,276	6,433				915	2,928				
Dallas Creek	143,709	29,232	9,067	73,193	2,953	4,792	21,684	1,990	$ 798		
Dolores	421,232	282,703	23,571	40,580	2,640	37,175	18,386	1,999	14,178		
Florida	11,429	9,720			120	1,486	103				
Fruitland Mesa	156,779	139,947				10,903	5,929				
Paonia	8,279	7,626			174	285	95				99
San Miguel	123,414	90,294		31,255		1,364	501				
Silt	7,510	6,735				565	60	150			
Smith Fork	4,690	4,300				286	104				
West Divide	265,396	188,971		69,966		5,796	663				
States of Colorado — New Mexico											
Animas-LaPlata	610,861	365,289		194,433		23,936	9,126		18,077		
San Juan-Chama	118,586	66,690		41,069		8,560	901	1,346			
State of Colorado — Wyoming											
Savery-Pot Hook	136,728	127,253			1,478	6,254	1,743				
State of New Mexico											
Hammond	7,465	7,259				206					
Navajo Indian Irrigation	659,581	659,581[a]									
State of Utah											
Central Utah Project											
Bonneville Unit	2,029,241	467,195	715,206	484,869	34,482	234,688	65,437	26,364			
Jensen Unit	79,936	7,738		54,340	874	3,148	1,909	454	45	$11,428	
Uintah Unit	174,007	91,828		4,203	2,013	72,519	3,444				
Upalco Unit	102,323	40,436		14,410	528	43,158	3,017	774			
Vernal Unit	10,587	9,616		613		246	111				1
Emery County	17,990	10,038		2,419		3,525	1,540	437			31
State of Wyoming											
LaBarge	5,343	5,146				197					
Lyman	36,629	26,264		1,234		7,844	1,287				
Seedskadee	47,690	1,638	3,589	10,036		30,966	1,257	201			1
Subtotal Participating Projects	$5,189,681	$2,651,932	$ 751,433	$1,023,622	$45,262	$498,834	$140,225	$33,715	$33,098	$11,428	$ 132
Other Facilities											
Hotchkiss Nat'l. Fish Hatchery, Colorado	8,057					8,057					
Jones Hold Nat'l. Fish Haterchy, Utah	6,116					6,116					
Subtotal Other Facilities	$ 14,173					$ 14,173					
Grand Total	$6,377,467	$2,757,831	$1,713,816	$1,031,114	$49,258	$561,789	$181,502	$33,899	$33,098	$11,428	$3,732

[a] Financed with Bureau of Indian Affairs appropriations.
[b] Project costs financed by contributions.

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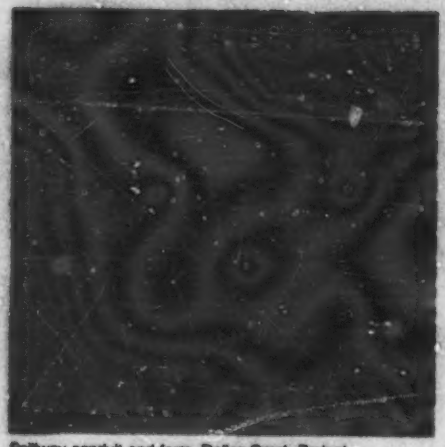
Estimated Repayment of Federal Investment

One of the few times Blue Mesa spilled.



Spillway conduit and form, Dallas Creek Project.

Effects of Glen Canyon spillway tunnel erosion.

Reimbursable Investment	September 30, 1993	(In Thousands)
Colorado River Storage Project and Participating Projects		$4,846,912
Eden Project (Irrigation portion to be paid from CRSP Revenue)		9,674
Salinity Control Projects (Portion to be paid from CRSP Revenues)		16,322
Total reimbursable from CRSP Revenue		$4,872,908

Allocation and Repayment	Estimated Repayment	Tentative Allocation
Irrigation		$2,124,248
Water User Organizations	$ 131,746	
Power and M&I Water Revenue — Storage Units	105,486	
Apportioned Revenues — Participating Project Costs	1,862,856	
Miscellaneous Revenues and Contributed Funds	4,873	
Unpaid Balance[1]	19,285	
Power		1,713,816
Power Revenues	1,561,204	
Miscellaneous Revenues and Contributed Funds	152,612	
Municipal and Industrial Water		1,031,115
M&I Water Revenues	1,019,760	
Miscellaneous Revenues and Contributed Funds	11,355	
Other		3,731
Miscellaneous Revenues and Contributed Funds	3,731	
Total	$4,872,908	$4,872,908

[1]Represents deferred payments on Indian lands of the Animas-LaPlata, Dolores, Florida, and Central Utah Projects.

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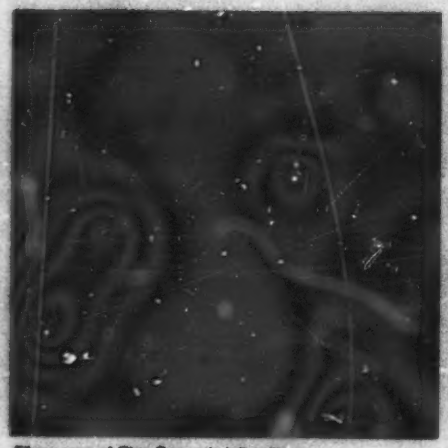
Progess of Repayment

Insulation over seepage cut-off wall, Dallas.



Elbow area of Glen Canyon's left spillway.

Trucks pump concrete into Glen Canyon spillway.

Principal payout and interest payments on the inservice reimbursable Federal investment are summarized in this table.

	Inservice Investment	Revenues Applied to Payout of Investment	Unpaid Balance	Interest Payments
Power				
Storage project and power portion of participating projects	$577,648,306	$204,645,285	$373,003,021	$206,925,202
M&I Water				
Storage Project	$ 7,459,644	$ 7,208,471	$ 251,173	$ 971,828
Participating projects	62,754,443	5,111,263	59,914,904[1]	6,726,052
Subtotal M&I Water	$ 70,214,087	$ 12,319,734	$ 60,166,077	$ 7,697,880
Irrigation				
Storage project	$100,653,124		$100,653,124	—
Participating projects and Eden	136,353,494	$ 3,264,840	133,088,654	—
Subtotal Irrigation	$237,006,618	$ 3,264,840	$233,741,778	—
Total	$884,869,011	$220,229,859	$666,910,876	$214,623,082

[1]Increased by $2,271,724 capitalized interest 1969-1977 — Seedskadee Project.

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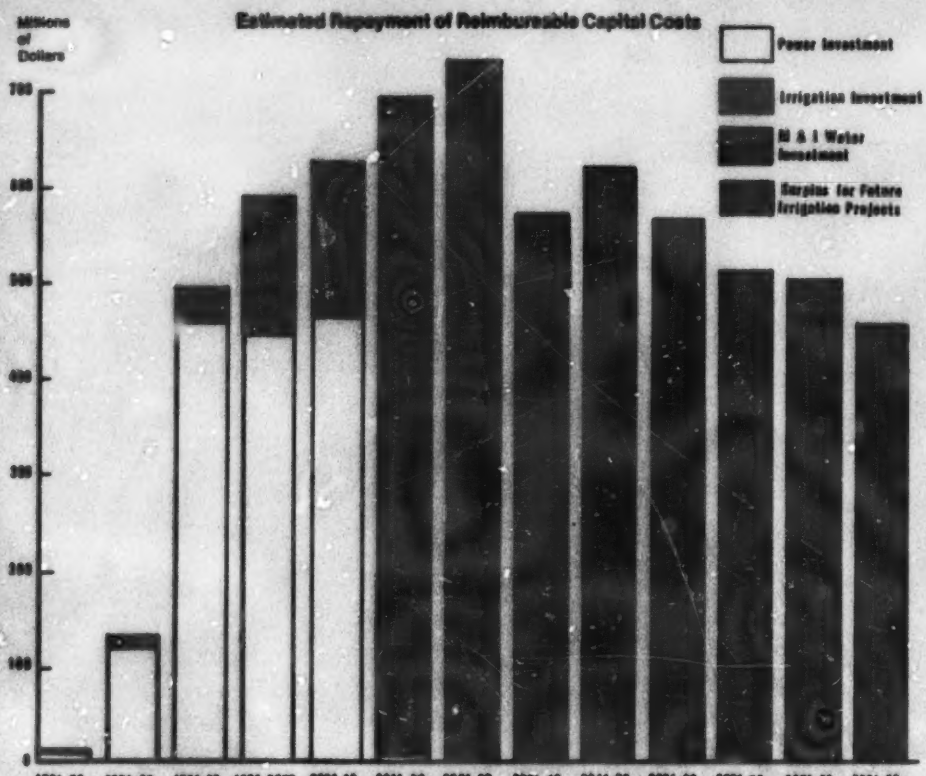
Rate of Repayment

The red canyon walls gave Flaming Gorge its name.



During fiscal year 1983, more than $50 million was applied toward repayment of the Federal investment in the Colorado River Storage Project and participating projects. Total repayment received through fiscal year 1983 amounts to nearly $195 million, which is about 23 percent of the $858 million Plant-in-Service and more than 4 percent of the $4½ billion projected total reimbursable Federal investment in the authorized storage units and participating projects.

In additon to the amount applied to repayment of the reimbursable investment, the project earned revenues sufficient to pay all operating costs, replacement costs, and current reimbursable interest costs. Operating costs of participating projects which have been turned over to the Water Conservancy Districts for operation were paid by the respective Conservancy Districts. More than 18 percent of the projected Federal investment was in service as of the end of the fiscal year.

Power sales produced nearly 97 percent of the net revenues during fiscal year 1983. All of these power revenues were applied toward the power investment in the storage units and participating projects. About one-third of the present power investment and nearly 12 percent of the estimated ultimate power investment have now been repaid. The nearly $49 million repaid by power revenues in fiscal year 1983 is a great improvement over the situation in fiscal year 1982 and 1981.

Through fiscal year 1983, revenues from the sale of municipal and industrial water from Glen Canyon and Navajo Reservoirs have returned $7.2 million toward repayment of the M&I investment in the storage units. This amount is nearly 97 percent of the $7.5 million investment to date.

During fiscal year 1983, more than a quarter of a million dollars was paid by irrigators on 10 participating projects. Through fiscal year 1983, these irrigators have returned nearly $3.25 million in repayment revenues.

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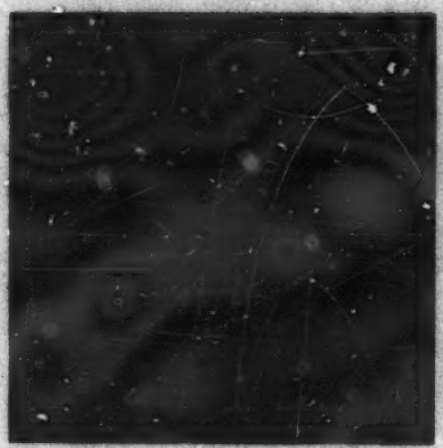
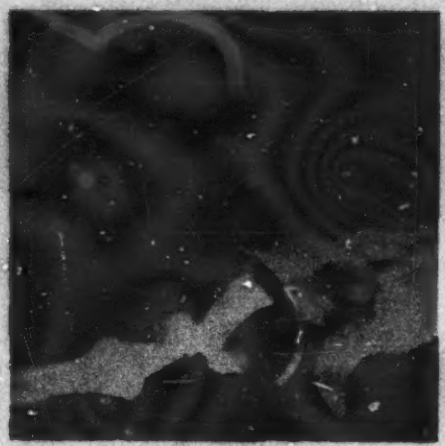
Navajo Reservoir scene of much activity.



Downstream face of Fontenelle Dam during spilling.



1983 was one of few times Crystal Dam spilled.

Through fiscal year 1983, power revenues have paid nearly $179 million, municipal and industrial water revenues have paid more than $12 million, and irrigators have paid more than $3 million. All of this repayment is in addition to operating costs and more than $207 million in reimbursable interest. To date, Colorado River Storage Project revenues have amounted to more than $885 million, nearly half of which has been returned to the Federal Treasury as repayment and interest on the investment.

Repayment contracts have been executed for 17 of the 24 participating projects, 16 of which are constructed or under construction. The Navajo Indian Irrigation Project is also under construction, but a repayment contract is not required for this nonreimbursable Indian project. Of the seven projects on which construction has not yet started, a contract has been executed on one of them; one is nearing contract execution; four are in the advance planning stage; and one has been postponed indefinitely.

Projections using current estimates of Colorado River Storage Project costs, construction schedules, and revenues from power sales, municipal and industrial water sales, payments by irrigators, ad valorem taxes, and miscellaneous revenues show that payment of the reimbursable costs of the authorized Colorado River Storage Project and participating projects can be accomplished within the repayment periods.

The repayment study used for this report is coordinated with the assumptions, costs and expenditures shown in the Bureau of Reclamation Budget Documents and Financial Records. The Colorado River Storage Project power rate used is $34.17 per kilowatt year and 6.7 mills per kilowatt hour (composite rate is 13.4 mills per kilowatt hour at a 58.2 percent load factor). However, for rate adjustment purposes, Western Area Power Administration, the power marketing agency, has prepared another repayment study in accordance with the August 26, 1983, agreement between the Bureau of Reclamation and the Western Area Power Administration.

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		POWER INVESTMENT STORAGE AND PARTICIPATING PROJECTS				M & I WATER INVESTMENTS STORAGE PROJECTS				IRRIGATION INVESTMENT STORAGE PROJECTS				IRRIGATION INVESTMENT PARTICIPATING PROJECTS			
			ELECTRIC PLANT				M & I PLANT				IRRIGATION PLANT				IRRIGATION PLANT		
YEAR OF STUDY 1	FISCAL YEAR 2	POWER REVENUES APPLIED 3	(a) IN SERVICE AT END OF YEAR 4	UNPAID BALANCE 5	ALLOWABLE UNPAID BALANCE 6	M & I REVENUES APPLIED 7	(a) IN SERVICE AT END OF YEAR 8	UNPAID BALANCE 9	ALLOWABLE UNPAID BALANCE 10	POWER AND M & I REVENUES APPLIED 11	(a) IN SERVICE AT END OF YEAR 12	UNPAID BALANCE 13	ALLOWABLE UNPAID BALANCE 14	TOTAL REVENUES APPLIED 15	(a) IN SERVICE AT END OF YEAR 16	UNPAID BALANCE 17	ALLOWABLE UNPAID BALANCE 18
SUBTOTAL																	
TOTAL																	

(a) FIRST FISCAL YEAR ESTABLISHED BY FIRST DEVELOPMENT PERIOD NOTICE ISSUED ON PAONIA PROJECT EFFECTIVE IN 1952. LAST FISCAL YEAR ESTABLISHED BY ESTIMATED END OF REPAYMENT PERIOD OF LAST IRRIGATION BLOCK OF FRUITLAND MESA PROJECT IN 2005.

(b) DOES NOT INCLUDE REPLACEMENTS ($28,129,000 THROUGH FY 1983), CAPITALIZED MOVABLE EQUIPMENT (ASPINALL $1,715,000), PLANNING SCORE $307,000, GLEN CANYON $845,000, TRANSMISSION DIVISION $3,035,000, AND CONSTRUCTION WORK IN PROGRESS ON TRANSMISSION FACILITIES WHICH WILL NOT BE COMPLETED IN THE 5 YEARS PRIOR TO 1988 ($26,815,000).

*REPAYMENT OF PLAN OBLIGATIONS DEFERRED BY LEAVITT ACT.

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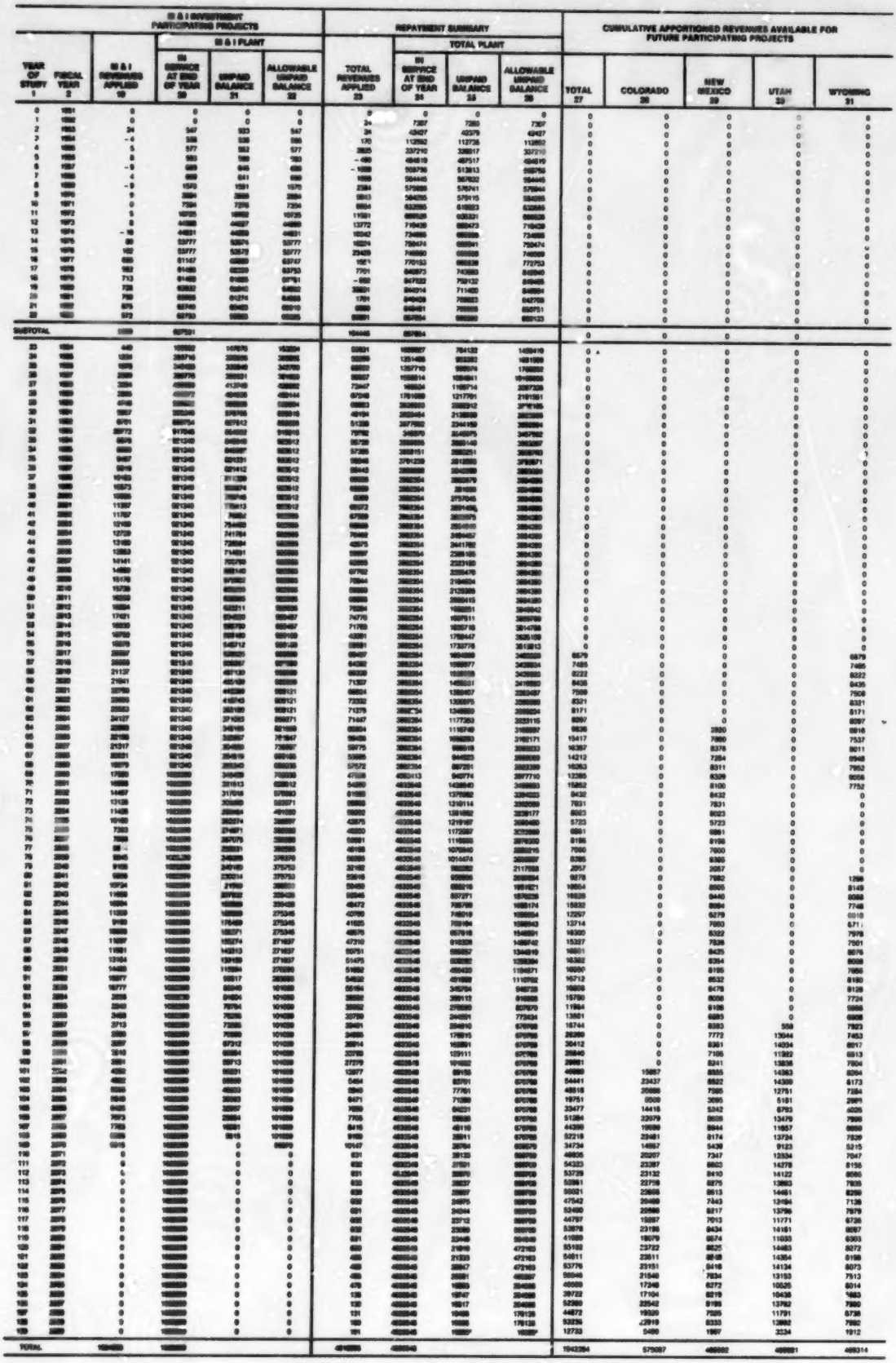

R & I INVESTMENT PARTICIPATING PROJECTS						REPAYMENT SUMMARY				CUMULATIVE APPORTIONED REVENUES AVAILABLE FOR FUTURE PARTICIPATING PROJECTS				
			R & I PLANT				TOTAL PLANT							
YEAR OF STUDY 1	FISCAL YEAR 2	R & I REVENUES APPLIED 10	IN SERVICE AT END OF YEAR 20	UNPAID BALANCE 21	ALLOWABLE UNPAID BALANCE 22	TOTAL REVENUES APPLIED 23	IN SERVICE AT END OF YEAR 24	UNPAID BALANCE 25	ALLOWABLE UNPAID BALANCE 26	TOTAL 27	COLORADO 28	NEW MEXICO 29	UTAH 30	WYOMING 31
SUBTOTAL														
TOTAL														

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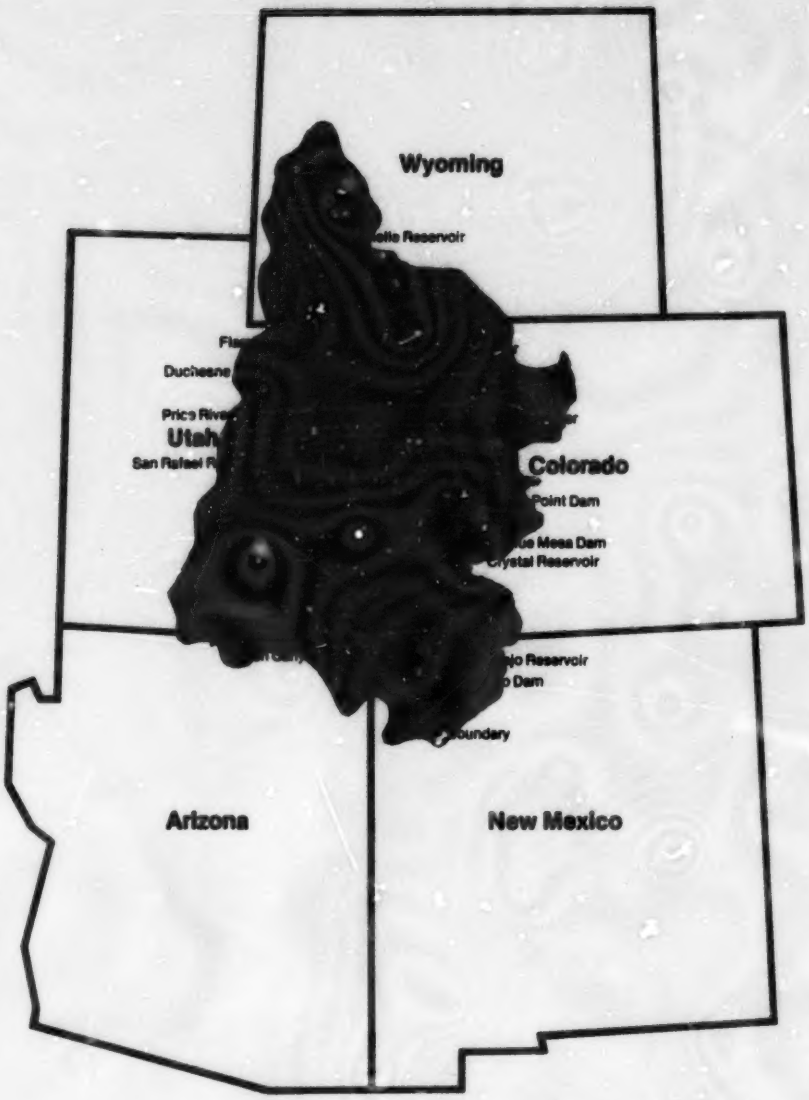

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